

DOCUMENT RESUME

ED 210 669

CS 006 434

AUTHOR Stallings, Jane; And Others
 TITLE A Study of Basic Reading Skills Taught in Secondary Schools. Report of Phase I Findings.
 INSTITUTION SRI International, Menlo Park, Calif.
 SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
 PUE DATE Jan 78
 GRANT NIE-G-77-0001
 NOTE 186p.; For related documents see CS 006 435-436.
 EDES PRICE MF01/PC08 Plus Postage.
 DESCRIPTORS *Classroom Techniques; Evaluation Methods; *Reading Instruction; *Reading Research; *Reading Skills; Secondary Education; *Secondary School Teachers; *Teacher Effectiveness

ABSTRACT

The first of three related reports, this volume describes the findings of the first phase of a study designed to identify teaching processes that are efficient in helping secondary school students learn to read. Following an introduction that provides background information about the study, the second chapter of the report discusses the design of the study, while the third chapter describes the selection of the schools and teachers in the study sample. Chapter four discusses the classroom observation instruments and the characteristics of the teachers studied, while chapter five focuses on the selection and training of the classroom observers. Chapter six contains an analysis of the results of the observations, followed by the conclusions and implications of the study. Appendixes include the observation instrument and training manual, test instruments, observer reliability agreement data, raw score conversion tables, and observation variables. (B7H)

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A STUDY OF BASIC READING SKILLS TAUGHT IN SECONDARY SCHOOLS

Report of Phase I Findings

January 1978

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By: Jane Stallings
Robert Cory
James Fairweather
Margaret Needels

Prepared for:

Department of Health, Education and Welfare
National Institute of Education
Washington, D.C. 20208

Grant No. NIE-G-77-0001

SRI Project 5987 ★

SRI International
333 Ravenswood Avenue
Menlo Park, California 94025
(415) 326-6200
Cable: SRI INTL MPK
TWX: 910-373-1246

ABSTRACT

The purpose of the study is to identify teaching processes that are efficient in helping secondary students learn to read. If such teaching processes can be identified, the second purpose of the study is to translate the findings into information that can be used by the classroom teacher to increase the reading achievement of students.

A total of 43 teachers and 905 students in 6 locations took part in Phase I of the study. Data were collected in Spring 1977, using an observation instrument, student ratings, a teacher questionnaire, and a reading achievement test. Student absence data were collected from the classroom teachers.

Partial correlation and regression analyses identified several teaching process variables that were significantly related to student outcome. Findings suggest that for greater efficiency in teaching basic reading skills at the secondary level, classrooms should be made up of students with similar reading abilities.

In classrooms where students and teachers spent more time on reading tasks, the reading gain was greater. In contrast, reading gains were smaller in classrooms with higher frequencies of social interactions and misbehavior. A positive relationship was found between achievement and feedback given to students. The most effective feedback was acknowledgment or praise for correct responses and probing questions when the answer was incorrect. Students were absent less often in classrooms where the environment was positive and supportive, where the rules were clear, and where they felt some friendship with the other students.

Six subgroups of classrooms were identified on the basis of pretest and posttest reading scores. An analysis of variance was conducted to contrast the gain groups with the no-gain group, and several efficient teaching strategies were identified for each group.

We found that teachers of students who enter class with low reading scores should arrange small groups where students read aloud. They should quiz the students frequently to assess their progress and should arrange their classroom management tasks so that they stay involved with the students throughout the class period.

Teachers of students who enter class with moderate reading scores should use a direct teaching method in which they present reading skill information. They should question specific students, get a response, and provide feedback. Positive feedback--praise, acknowledgment, probes, and guides--is more efficient than negative feedback. Teachers should stay involved with the students during the entire period.

Teachers of students who enter class with higher reading scores can use other subject matter as a vehicle for teaching reading. The students can do more work on their own and teachers can afford to spend more time on management tasks than can teachers of students in the other two groups.

On the basis of Phase I findings, workshops will be prepared for Phase II of the study. A sample of teachers will be taught to apply the findings from Phase I.

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I INTRODUCTION

The need for remedial reading for junior and senior high school students has become more visible to the public during the past 10 years. During this time, several suits have been brought against local and state governments by parents whose children have been graduated from high school but who are unable to complete employment applications or who fail reading exams given by the U.S. Army or other employers. The percentage of high school students in California who applied to take the state equivalency exam and had skills to pass it was estimated to be 53%.

Identifying students who lack reading skills in Grades 7 to 12 is not difficult. Assisting these students to gain basic reading skills is very difficult. Once students who lack reading skills are identified, reading programs need to be provided. Junior and senior high school systems primarily hire English teachers who are capable of teaching English literature, history, grammar, or creative writing, but who do not have training in remedial reading methods. One superintendent from a moderately sized California city reported that a position for a teacher with a high school credential and skills in teaching basic reading went unfilled.

Since qualified people are difficult to locate, teachers from other disciplines are assigned to teach the reading classes. A poll of 27 teachers teaching these classes in high schools revealed that only two had training or experience in teaching reading. The others were trained to teach typing, social studies, science, and/or art, but not reading.

While many basic reading curricula are available for use in reading classes, there are very few recommendations for how to organize and manage the classroom, i.e., how to group, or how to plan activities for optimum learning. Such definitions have not been forthcoming because little research has been conducted that relates instructional processes to student outcomes at the secondary school level.

Several impressive studies relating process to outcome have been conducted in elementary schools. The process variable found to be related to achievement in all of the studies was student time spent on task. Rosenshine (1977) summarizes this research in the following way:

The more successful teacher is one who structures and selects the activities, who obtains a large number of academic engaged minutes each day, who tends to ask questions which have specific answers in a controlled practice format, who places students in groups where they are supervised by the teacher, and who does this in a controlled but convivial classroom. (p. 21)

One study of 7th and 8th grades in Austin, Texas (Brophy and Evertson, 1974),* also indicates that efficient teaching strategies keep students on-task and misbehavior has a negative relationship with achievement.

Some important research that focuses upon teaching effects in third grades is being conducted by Nathaniel Gage and staff at Stanford University's Program on Teacher Effectiveness (PTE). They have reviewed four of the major correlational studies conducted in elementary schools: "The Texas Teacher Effectiveness Project" (Brophy and Evertson, 1974), "Beginning Teacher Evaluation Study, Phase II" (McDonald and Elias, 1976), "Follow Through Classroom Process Measurement and Pupil Growth, 1970-71" (Soar, 1973), and "Follow Through Classroom Observation Evaluation, 1972-73" (Stallings and Kaskowitz, 1974). From the process variables that correlated significantly with reading achievement in all of these studies, the Stanford PTE staff constructed three instructional units:

- Behavior management and classroom discipline strategies
- Instructional methods
- Questioning and feedback strategies.

Inservice teacher workshops were then developed for each of the three main categories and a sample of teachers was trained to use the instructional processes. An experiment was then conducted to see whether children in classrooms of trained teachers achieved more in reading for the year than did children in classrooms of teachers who did not receive the training.

*References can be found at the end of this report.

This research was important because it attempted to transfer research findings into inservice teacher training materials.

The present study was designed to identify those classroom processes that relate to student achievement and absence rate at the upper levels of schooling. As did the Gage PTE study, we will attempt to translate the findings regarding efficient classroom instructional processes into useful guidelines for teachers. In contrast to the Gage PTE study, we will train the same teachers in Phase II that were observed in Phase I. Gage used the findings from several correlations studies as the basis for his workshops.

Collection of process data requires observation in the natural classroom setting. To do this, the SRI elementary school observation instrument was revised for use in junior and senior high school reading classes. The instrument was piloted in Salinas during the spring of 1976. Teachers and administrators were trained to use it and then made recommendations for changes.

Based upon previous research findings, we hypothesized that student time on-task would be related to achievement. However, the important research question is how does the teacher orchestrate the class to keep students on-task? Answers to this question could provide badly needed guidelines for inservice training for teachers of reading in junior and senior high schools. The following report describes the sample, the instruments, the approach, the surprises, and the plans for the future.

II DESIGN

The premise for the Phase I design is that teaching processes will be identified that predict test scores and absence rates at the junior and senior high school level. Further, at the secondary level, the processes related to achievement will be similar to those reported for the Follow Through Planned Variation evaluation. The premise for Phase II is that teachers who receive information on the processes that are related to achievement and absence rate will change their own behavior to increase or decrease the frequencies of particular processes. (If this is found to be the case, such a program of observing and informing teachers would be a valuable inservice training strategy.)

The following four hypotheses for Phase I are based on the empirical findings of the Follow Through Planned Variation study (Stallings and Kaskowitz, 1974):

- Teacher reinforcement for correct responses and guidance for incorrect responses will be positively related to academic achievement. The value of feedback has been well documented in learning theory and in the Follow Through studies.
- The frequency of reading-related verbal interactions will be positively related to student achievement in reading.
- The number of social interactions will have a negative relationship with reading achievement.
- The student absence rate will be related to the positive affect recorded in the classroom, i.e., the more supportive the environment, the lower the absence rate.

These hypotheses were tested through the examination of relationships between process variables (developed from the data recorded with the SRI Secondary Observation Instrument and from the Student Rating of Instructor Scales) and student outcomes as assessed by the Comprehensive Test of Basic Skills, the FIRO-B, and absence rate.

For one class period, 43 teachers representing 6 school districts were observed for 3 days (morning only). Reading scores from Spring 1976 and Spring 1977 were obtained for as many students as possible in the classes being observed.

The proposal for the Basic Skills grant specified that partial correlation and regression analyses would be conducted to test for relationships between instructional process and gain on outcome variables. If significant relationships were identified, profiles of key variables for each teacher in the study would be generated. In Phase II of the study, teachers will be given their own profiles of the variables found to be related to student gain. Teachers will be instructed to modify their classroom behavior in keeping with the findings of the study. Teacher profiles have been generated and will be used in the Phase II inservice teacher training workshops.

Full details of the sample, instruments, analysis, and findings are offered in the following sections.

III SAMPLE

Selection of Districts

During the summer of 1976, SRI invited representatives from eight school districts to participate in a discussion of the proposal SRI had prepared for the NIE-sponsored Basic Skills Grants Competition the previous spring. These eight districts were chosen for preliminary consideration according to four main criteria:

- That each district offer remedial and/or compensatory programs in basic skills areas at the junior or senior high school level;
- That each district administer standardized achievement tests each year to all students;
- That a mix of urban, suburban, and rural school districts be represented in the sample;
- That the districts be located in northern California (to minimize travel and other data collection expenses).

The school districts represented at this first meeting satisfied these criteria; their representatives made a number of suggestions regarding the SRI proposal. They discussed the feasibility of participation by their respective districts. Later they identified the number of reading teachers who might take part in the study.

Upon receipt of the grant in December, six districts, all meeting the above criteria, elected to be included in the study. The sample included:

- Fresno Unified School District
- Monterey Unified School District
- Ravenswood Elementary School District
- Salinas Unified School District
- Sequoia Union High School District
- Tulare Elementary School District.

Selection of Schools and Teachers

Within each participating district, the local Director of Special Projects identified those schools offering remedial or compensatory reading instruction, either directly as a special basic skills class or indirectly through a content area course. Teachers offering such instruction were then notified of the study and invited to an introductory informational meeting with SRI staff at their respective schools. At this meeting, the project was described and compared with previous teacher effectiveness research. Teachers were told what demands would be made on their time and services during the study, and what benefits they could expect during Phase II. SRI promised to provide individual feedback to each participating teacher regarding his or her own classroom behavior based upon the objective observations. At all sites, school administrators emphasized that participation was voluntary and, to the best of our knowledge, no pressure was exerted on teachers to participate. Criteria for acceptance in the study were that the focus of the class be on basic reading skills instruction, that the students enrolled in the class were likely to stay in that class all year, and that all students be tested with standardized achievement tests.

Of the 51 teachers who attended the informational meetings in December, 47 decided to participate in the study. At the time data were collected in the spring, 4 teachers decided not to participate; thus, 43 classrooms with 905 students were in the sample. Table 1 presents the number of teachers and students by grade level that are participating in each district.

The study was designed to have an equal number of classrooms from each district; however, because it was impossible to complete that design, we accepted all teachers who volunteered to be in the study. The representation from the six districts is very uneven; therefore, no analysis could be conducted at the district level. Nevertheless, the cities and schools in which these classrooms are located are similar and different in several respects. Several demographic factors might effect the reading programs being provided, e.g., the amount of money

Table 1
BASIC SKILLS STUDY SAMPLE
BY GRADE LEVEL AND DISTRICT
(Students/Teachers)

<u>Grade</u>	<u>Fresno</u>	<u>Monterey</u>	<u>Ravenswood</u>	<u>Salinas</u>	<u>Sequoia</u>	<u>Tulare</u>	<u>Total</u>
<u>Junior High</u>							
7			24/1	26/1		76/5	126/7
8			25/1	28/1		104/4	157/6
Combined							
7-8	21/1			127/5		14/1	162/7
8-9	98/4						98/4
7-9		44/3					44/3
<u>Senior High</u>							
9	14/1				23/2		37/3
10							
11	93/4						93/4
Combined							
9-12	85/4			72/3	31/2		188/9
Total	311/14	44/3	49/2	253/10	54/4	194/10	905/43

available per student and the number of students with limited English speaking ability.

Fresno

Fresno is a large industrial and agricultural community located in the central valley. The school district is unified and includes 54,749 black, white and Mexican American students. The 14 teachers in our sample are located in two junior high and three senior high schools. The schools range in size from 600 to 1,200 students. The students in the schools differ considerably; in the largest school, 10% of the students have limited English speaking ability while in another school there are no students with limited English speaking ability; the percent of students in the schools from low income families ranges from 79% to 20%. Because the students in the schools represent such different populations the court has ordered a bussing plan to be in effect by 1978.

Although the school district allocates \$1,331 per student, all five schools have funding from several categorical aid programs. The lowest of these funds, \$441, boosts the total student expenditure to \$1,772 for the 92% of eligible students in School C (See Table 2).

Monterey

Monterey is a moderate-size resort and agricultural city located on the Pacific coast. The total school district includes 15,397 students. Three teachers from two junior high schools were included in the study. The two schools are very similar in their number of students with limited English speaking ability (5%) and in their percent of low income families (3%-4%). The students are predominantly white and Mexican American. The school district allocates \$1,400 per student. Neither of the schools in our sample receives additional funds from categorical programs. (See Table 2.)

Table 2
SAMPLE DISTRICT AND SCHOOL DESCRIPTORS

	1	2	3	4	5	6	7	8
<u>District-School</u>	<u>District Size</u>	<u>Per Pupil Expenditure</u>	<u>School Size</u>	<u>% Low Income</u>	<u>% Limited English Speaking</u>	<u>Number of Categorical Aid Programs</u>	<u>% Program Participants</u>	<u>Funding Per Participant</u>
<u>Fresno</u>	54,749	1,331						
School A			612	79	1	3	100	487
School B			2,079	36	0	2	28	528
School C			1,286	43	10	2	92	441
School D			804	55	8	2	68	513
School E			905	20	5	1	57	522
<u>Monterey</u>	15,397	1,400						
School A			950	3	5	0	0	0
School B			787	4	5	0	0	0
<u>Ravenswood</u>	3,406	1,152						
School A			496	43	1	3	100	268
<u>Salinas</u>	15,447	1,475						
School A			1,926	17	15	2	19	461
School B			1,342	15	14	2	55	401
<u>Sequoia</u>	10,535	1,975						
School A			2,125	6	0	0	0	0
School B			2,080	6	0	0	0	0
<u>Tulare</u>	4,427	1,039						
School A			534	37	0	0	0	0
School B			555	16	0	0	0	0

Ravenswood

Ravenswood is a small elementary school district located in San Mateo County. It is not in an incorporated city. The area is primarily industrial and residential. The school district has 3,406 students, most of whom are black. Two teachers from one junior high school are included in this study. Forty-three percent of these students are from low income families. The school district allocates \$1,152 per student. In addition, the school has \$268 per student from three categorical programs (see Table 2).

Salinas

Salinas is a moderate-size city located 30 miles inland from the Pacific Ocean in the heart of an agricultural area. The school district has 15,447 students who are predominantly white and Mexican American. The 10 teachers in our sample are located in a junior and senior high school. The student population is similar in the two schools. Approximately 15% of the students in both schools have limited English speaking ability and 16% are from low income families.

The school district spends \$1,475 per student. In addition, the schools receive \$401 to \$461 per eligible student from categorical programs (see Table 2).

Sequoia

Sequoia Unified High School District is in San Mateo County. The school district serves 10,535 high school students in five high schools in five different small cities. The four teachers in our study represent two schools very similar in size and percent of low income families (6%). Both schools have very few students with limited English speaking ability. The student population is predominantly white with some black students. Students in this district can attend any one of the five schools by requesting a transfer.

The district spends \$1,975 per student which is more than any other district in the sample. Neither of the schools receives additional funds from categorical programs.

Tulare

Tulare is a small rural town in the central valley. The elementary school district has 4,427 students, including those in the junior high schools. The high schools are in a separate school district. All 10 of the Tulare teachers in this study are located in two junior high schools. Each of these schools has approximately 500 students. However, one school has twice as many students from low income families.

The school district spends \$1,039 per student. This is less than all other districts in the sample, and these two schools do not receive any additional funds from categorical programs.

IV INSTRUMENTS

To describe the classroom processes, a classroom observation instrument was adapted and two student ratings were selected. Student outcomes were assessed by means of an achievement test given by the school district, a personality test, and student absence data. A teacher questionnaire was administered to determine whether differences in teacher characteristics and attitudes contributed to differences in student achievement and absence.

Classroom Process Instruments

Observation Instrument

The SRI Secondary Observation Instrument (SOI) is based upon previous observations systems developed at SRI. As a result of workshops conducted with teachers in Salinas, California during 1975 and 1976, revisions were made in the instrument to permit the recording of events that occur in junior and senior high school classrooms.

The SOI provides a record of instructional and social activities that occur in the classroom. It records the materials being used and the interactions between teachers and students. The observer focuses on the lead teacher and records all persons with whom he or she interacts.

The SOI contains four sections. The first section, Identification Information, identifies the schools, teachers, and classes. The second section, Classroom Summary Information, records the number of adults and students attending regularly in the classroom.

The third section is the Classroom Snapshot. The Snapshot is a matrix that yields data about the activities of each adult and student in the classroom, the size of the group, and the materials being used. From this record, information is obtained on how the teacher spends his or her time and with whom, how the aides spend their time and with whom, and how often the students operate independently and in what activities.

The fourth section, the Five-Minute Interaction (FMI), is used to record the teacher's verbal interactions or nonverbal behaviors. It consists of a series of frames in which each behavior/interaction is recorded in the four categories provided: Who, To Whom, What, and How. Consecutive frames can record continuous interactions.

Each observation booklet has one Identification Information and Classroom Summary Information form and five sets of the Classroom Snapshot and Five-Minute Interaction sections. Identification Information and Classroom Summary Information sections are coded once during the class period; the Classroom Snapshot and the FMI are coded 5 times (alternating from one to the other) per class period. Each classroom was observed for 3 days, providing 15 Snapshots and 15 FMIs. See Appendix A for a copy of the observation instrument and operational definitions.

The Classroom Environment Scale

The Classroom Environment Scale, Form R,* was selected to examine students' perceptions of the instructional process occurring in the classroom. This particular scale was normed on a sample similar to the sample population. It yields nine subscales and can be completed in approximately 10 minutes. The subscale reports the students' perception of (1) involvement, (2) affiliation with others in the class, (3) receiving teacher support, (4) task orientation, (5) competition, (6) order and organization, (7) rule clarity, (8) teacher control, and (9) teacher innovation.

In order to be certain that the results were not influenced by the students' skill in reading, each of 36 items on the scale was read aloud by the SRI data collector and the students checked the True and False column. (A copy of each test instrument used in this study can be found in Appendix B.) The teacher was not present in the room at the time of

* Moos, R. H., and E. J. Trickett, Classroom Environment Scale, Form R, Consulting Psychologist Press, Inc., Palo Alto, CA (1974).

the testing and students were assured that no one but the SRI staff would see the ratings.

Student Rating of Instructors

This rating scale was developed in 1973 by the Sequoia High School district. Students are asked to rank their instructor on 16 variables on a scale of 1 to 5. On the basis of content, we developed four sub-scales: teacher professionalism, individual attention received, fairness, and enjoyment of class. This rating scale was also read to the students by the SRI data collector in the teacher's absence.

Outcomes

Comprehensive Test of Basic Skills (CTBS)*

The Comprehensive Test of Basic Skills (CTBS) is a test widely used in California in junior and senior high schools. It has multiple forms and levels. Most schools involved in State-funded compensatory programs are required to give this test in the Fall and in the Spring. We used the scores from the school-administered test. This procedure limited our interference in the classrooms and saved the cost of administering and processing 900 student achievement tests.

Absence Rate

Absence data for the classes in the study were requested from each teacher. In the Follow Through Classroom Observation Evaluation, 1972-73 (Stallings and Kaskowitz, 1974), instructional processes accounted for 63% of the variance in the absences of third graders in the sample. Absence rate was used as an outcome indicator of the students' attitudes toward school. If students like school (or the class), they are more likely to attend classes than if they do not like the class. Classroom processes in the present study were expected to explain some of the

* Comprehensive Tests of Basic Skills, Forms Q, S, and T, CTB/McGraw-Hill, Del Monte Research Park, Monterey, CA (1977).

variance in classroom absenteeism. The relationship between achievement in reading and absenteeism was also to be investigated.

FIRO-B^{*}

The FIRO-B was selected to examine the relationship between specific student characteristics or personality variables and different classroom environments. The subscales on the FIRO-B are the following:

- Wanting to be included by others
- Wanting to include others
- Wanting to be in control of events
- Wanting others to be in control of events
- Wanting to receive affection
- Wanting to express affection.

Each subscale has a range of 1 to 9. The hypothesis was that students wanting to be under control might show more positive results in the various measures in highly structured classrooms while students who wanted to be in control would show more positive results in classrooms which allow more independent action. (See Appendix B for a copy of the instrument.)

Demographics: Teacher Characteristics

To see whether teacher characteristics are related to student outcomes or classroom processes, a teacher questionnaire was selected. Eight subscales of the questionnaire prepared by the staff in the Stanford University Program on Teaching Effectiveness[†] were used. Minor modifications were made to make items more suitable for secondary teachers. The subscales identify teacher rapport, verbal fluency,

^{*} Will Schutz, FIRO-B, Consulting Psychologists Press, Palo Alto, CA (1977).

[†] "An Experiment on Teacher Effectiveness and Parent-Assisted Instruction in the Third Grade," Program on Teaching Effectiveness, Stanford Center for Research and Development in Teaching, Stanford University, Stanford, California (1977).

anxiety, philosophy toward student-selected or adult-directed environments, motivational techniques, teacher concerns, teacher flexibility, and biographical information.

V FIELD OPERATIONS AND TRAINING

Site Organization

One site coordinator in each district, usually the Director of Special Projects, assisted the SRI effort. This allowed SRI to have a representative who was on-site at all times to handle tasks that were essential to efficient data collection as well as to provide a liaison between SRI personnel and the school district.

The role of the site coordinator included the following responsibilities:

- Contacting teachers and scheduling appointments.
- Selecting the data gatherers for the site.
- Monitoring the data collection effort and assisting in rescheduling, when necessary.
- Assisting as needed in administering rating scales and questionnaires.
- Assisting in the resolution of local problems.
- Carrying out or verifying the procedures necessary to ensure the confidentiality of the data.
- Assisting in getting attendance data from teachers for the classes in the study.

It should be noted that although the primary function of the data collection personnel was to collect classroom observation data, they also administered the student rating scales and the FIRO-B. In this section, the data gatherer will be referred to most often as the observer, since that activity required the most training and the most time spent in the collection of data.

Selection of Classroom Observers

Site coordinators in each district selected as observers people whom they felt would be accepted by the teachers in the study. For the most

part, those selected were substitute teachers; most had teaching credentials. In one district, the individual selected was unable to attend the training session and the district agreed to having an SRI staff member familiar with the area conduct the observations in that district.

The number of observers attending from each district was in proportion to the number of sample classrooms in the district:

	<u>Observers</u>	<u>Classrooms</u>
Fresno	3	14
Monterey	1	3
Ravenswood/Sequoia	1 (SRI staff)	6
Salinas	3	10
Tulare	1	10

Training of Classroom Observers

Pretraining Activities

Those selected as observers received a home training kit 7 days before the observation training session. Trainees were required to memorize the definitions and to have a thorough understanding of all codes on the first day of training.

Training

Observation training sessions began on April 26 in Menlo Park, with 9 trainees in attendance for the 7-day session.

During the training session an attempt was made to expose the trainees to as many different classroom situations as possible, and allow for discussion as to how these events would be coded on the observation system.

The training was conducted at SRI. Most of the training time consisted of showing trainees videotapes of secondary classrooms, coding the tapes with the observation system, and discussing any questions or problems that arose from the coding. On the third through the fifth

morning, trainees conducted practice observations in high school classrooms in the Menlo Park/Palo Alto area. These practice observations were approximately 1.5 hours long. The trainees then returned to the training room and discussed coding problems that had arisen during the practice observation.

In addition to the coding from videotapes and the classroom observations, trainees were assigned coding exercises to complete in the evening. These were dialogues of classroom situations. Each morning the work from the previous evening was reviewed and discussed.

Throughout the training session, reliability checks were conducted. The trainees and trainer would code a videotape and a tally would be made of the frequency of each code used by each observer. This procedure assisted the trainer in identifying specific code(s) on which an individual trainee needed additional help.

On the sixth afternoon, a set of reliability tapes was shown. All were tapes of classroom situations not seen previously by the trainees. In an attempt to have as many examples of different codes as possible for reliability, the videotapes were developed with freeze frames on the tapes and observers were told to code the interaction occurring at the freeze frame. The SRI trainer had coded the tapes prior to showing them to the trainees. The trainer's coding was used as the criterion, and trainees were expected to reach at least a 70% agreement with the criterion coding. All observers reached or exceeded the required 70%.

On the seventh morning observers were given feedback on the reliability coding of the previous afternoon. The trainer showed the tapes again and trainees viewed the tapes while looking at their coding. Any incorrect coding was discussed at that time. All observers were found to be acceptably reliable. (See Appendix C for a report of observer reliability and interrater agreement.)

In the afternoon of the seventh day, observers were trained how to administer the student rating scales and the FIRO-B. Observers were given their schedules, materials, and envelopes for returning data to SRI. Teacher questionnaires and student rating scales were to be collected and sent immediately to SRI.

Suggestions were made for establishing and maintaining rapport with the school administrators, the teachers, and students. Observers were told not to make any remarks about the teachers or students, since remarks could be misinterpreted and cause problems. Observers were instructed to call SRI for clarification if they were unsure of any procedures.

VI ANALYSIS AND RESULTS

Initially, we planned to perform partial correlation and stepwise regression analyses for the sample, as had been done in the Follow Through Observation Evaluation, 1972-73 (Stallings and Kaskowitz, 1974). However, the data collected for the Basic Skills study indicated that student pre-test scores varied widely within classrooms (as much as from Grade 2 to Grade 13 equivalency). With such variations, teachers could be expected to use different classroom processes; that is, instructing a class of students who tested at Grade 2, 3, or 4 level might require different teaching techniques than instructing students at the Grade 6, 7, or 8 level. Partial correlations or stepwise regressions using the total sample were likely to mask interesting process/outcome relationships in subgroups of classrooms.

Therefore, we developed an analysis plan that emphasized the following steps:

- (1) Partial correlations between classroom processes and student achievement (holding Spring 1976 CTBS reading scores constant).
- (2) Stepwise regression of Spring 1976 CTBS reading scores first, then classroom process variables.
- (3) Correlations between classroom processes and absence rate.
 - Partial correlations (holding Spring 1976 CTBS reading scores constant).
 - Pearson product moment correlations.
- (4) Stepwise regression of absence rate with classroom processes as independent variables.
- (5) Scatterplot of classes based on pretest/posttest scores to determine achievement subgroups within the total sample.
- (6) Discriminant analysis to verify the utility of the achievement subgroups on the basis of differences in classroom processes.
- (7) One-way analyses of variance and orthogonal contrasts on selected input variables to further examine intergroup differences.

- (8) Teacher profiles with a description of each teacher's standing relative to the entire sample on selected variables.

Description of the Data Collected

Despite any researcher's efforts to create the best theoretical study plan, the realities of the experimental setting often require modification of that plan. This is especially true for those who attempt to study natural classrooms in real schools. During the Basic Skills study, several problems became apparent as the data were logged into the record.

As a criterion for being included in the study, we had asked that classrooms have students who were assigned to that class for the entire year. In 4 out of 43 classes, the students were reassigned at mid-semester. The plans of teachers and administrators do sometimes change mid-year.

We also asked that all classes focus upon basic reading skills, expecting that all students would be deficient in reading skills. We found that the grade equivalent scores of students within some classes ranged from Grade 2 to Grade 13. Classrooms had some students scoring above the 49th percentile.

We relied upon test data collected at the schools and asked that all classes have fall and spring CTBS test data. In Fresno and Monterey, the students were tested in the spring only. Since Fresno was our largest site, we could not afford to eliminate the site from the sample. Thus, we decided to use Spring 1976 and Spring 1977 test scores for all districts. Then we found that three different levels and four different forms of the CTBS has been used in the districts. In each instance, we converted the total reading raw score (for the CTBS form and level) to the appropriate standard score. (The raw standard score conversion tables are shown in Appendix D.) While standard scores for Forms Q and R are equivalent, they must be converted for comparison to standard scores for Forms S and T. All test scores were converted into Form S/T standard scores (using the table shown in Appendix D).

One district had either Spring 1976 or Spring 1977 test data for their four classrooms. These could not be used in the analysis. One

classroom with an enrollment of eight had pretest and posttest data for only one student. The decision rule was established that classrooms with fewer than one-third of the students with pretest and posttest data would not be included in the analysis. With this criterion, 36 of the 43 classrooms had sufficient test data to be included in the analysis that included process and test score data.

We did collect complete observation data for each of the 43 classrooms; i.e., a total of 3 class periods yielding 15 Snapshots and 15 FMI observations were available for each classroom. All 43 teachers completed the questionnaire. Absentee reports were obtained from 35 of the 43 teachers. Previous arrangement had been made with teachers to report absentee data for the class, and teachers were given \$10 for reporting these data to SRI. Student ratings were obtained from 718 students on the Classroom Environment Scale and 713 students on the Rating of Instructors. The FIRO-B was completed by 721 students.

Partial Correlations between Reading Achievement and Observed Process Variables

To identify classroom processes that related to student achievement, we computed partial correlations, holding Spring 1976 CTBS reading scores constant. A total of 116 variables developed from Snapshot and Five-Minute Interaction codes were selected by the principal investigator for use in the analysis. See Appendix E for the total list of variables. The observation and test data for 36 classrooms were included in this analysis. Table 3 identifies 29 observed process variables that were significantly correlated ($p > .10$) with achievement.

Two of the highest positive correlations with reading achievement are Snapshot process variables describing students reading aloud either to a teacher ($r = .40$) or to the whole group ($r = .59$). Two other variables with high positive correlations with reading are the teacher discussing the reading work ($r = .41$) and probing students who say they do not know the correct answer ($r = .52$). All four of the above variables describe a classroom environment where the students are on-task.

Table 3

PARTIAL CORRELATIONS OF PROCESS VARIABLES
AND STUDENT READING ACHIEVEMENT*
(N = 36 Classrooms)

Variable Number	Description	r	p
<u>Snapshot</u>			
TBM2	Students read aloud with teacher from workbook	.40	.007
TDM7	Teacher instructs using chalkboard	.23	.08
TEM9	Teacher discusses the reading task	.41	.006
TLM2	Teacher grades papers	-.24	.07
IAM2	Students read silently from workbooks	.30	.04
IAM1	Students read aloud from texts to the class	.59	.001
IIM3	Students take tests or quizzes	.25	.09
IKM9	Social interactions	-.52	.001
IOM9	Student uninvolved	-.27	.07
<u>FMI</u>			
5	Adults--Interaction with individuals	-.25	.07
7	Adults--interaction with entire group	.23	.08
9	Student questions, or requests about reading	-.22	.10
44	Adult response to students' questions	-.21	.10
54	Student reading aloud	.24	.07
61	Adult instructs small group in reading	.21	.10
62	Adult instructs entire class in reading	.23	.08
76	Adult acknowledges student behavior	.25	.07
92	Adult gives negative corrective feedback for task or reading	-.21	.10
94	Adult gives negative corrective feedback for behavior	-.23	.08
105	Adults not interacting with students	-.23	.08
113	All classroom interactions related to student behavior	-.23	.08
116	All positive interactions	.24	.08
117	All negative interactions	-.29	.05
121	Students sent from classroom for disciplinary reasons	-.26	.07
126	Adults offer students a choice of activities	-.33	.02
131	Students say 'I don't know the answer'/adult probes student	.52	.001
136	Adult asks with student response to reading question unacceptable/adult asks another student	-.21	.10
160	Adult interaction with intruder	-.25	.07

* Spring 1976 CTBS reading scores were held constant.

Many of the negative correlations describe off-task behavior, the largest of which is social interactions ($r = -.52$). The more often students are talking about social events the less often they are reading. All negative corrective feedback to students for behavior or for reading also seems ineffective in helping students gain in reading ability.

The secondary observation instrument is based upon the observation instrument used in Follow Through, but the codes are more specifically related to reading in the secondary instrument. Although we cannot make direct comparisons between the two data sets, we can compare results of similar variables.

In the Follow Through Grade 3 observation study, we found a relationship between a relatively frequent use of workbooks or textbooks and the children's reading achievement. Similarly, we find a correlation between reading in textbooks and workbooks and higher reading scores in the secondary school classroom.

The Follow Through data indicated that children prospered more when the teacher focused attention more frequently upon a large group or the total group rather than when the teacher worked with one student at a time. Working with a group or the total class was also more efficient at the secondary school level. This does not mean that working with individuals is poor practice. It does suggest that when a large amount of class time is spent with one student, the other students may not receive the instruction they need. Thus, it is important to organize the classroom to provide instruction to the maximum number of students possible for the longest possible period of time.

In the Follow Through data, all of the variables that included positive or negative corrective feedback or praise for student responses in reading were positively correlated with achievement. The findings for the feedback variables in the secondary school study differ; negative corrective feedback has a negative relationship to reading achievement (Var. 92), while probing the student when he says, "I don't know," or adding some information has a positive relationship to reading achievement (Var. 131). This latter questioning technique is designed to keep

students involved and allow them to experience success. It is a positive way to finally elicit the correct response.

Interactions among students or teachers which are social in nature had a negative relationship to achievement in both the Follow Through elementary school data and the Basic Skills secondary school data. This does not imply that social conversations should not occur at all; it does mean they should not occur during reading class.

In summary, to achieve the most in reading, the Follow Through data and the Basic Skills secondary school data suggest that students should spend much of their time in class in reading workbooks and textbooks; that teachers should use positive feedback while working primarily with a group of students or the total group; and that social interaction during class time should be reduced.

Partial Correlations Between Reading Achievement and Student Rating Scales

We thought it would be of interest to see how the students' ratings of teachers would relate to student outcomes. At the secondary school level it seemed likely that students could provide useful information regarding classroom process, i.e., their experience in the classroom: Was the teacher prepared? Were the rules clear? Did the teacher keep control of the class? Partial correlations (holding Spring 1976 CTBS reading scores constant) were computed to examine the relationship between achievement and the student ratings.

Classroom Environment Scale

The Classroom Environment Scale has 36 items that were read aloud to the students with the teacher absent from the room. The 36 items represent 9 subscales of 4 items each. Table 4 reports the correlation of each subscale with achievement and with absence rate.

Scores on the subscales for classrooms ranged from 1 to 4. Involvement, the highest correlation with CTBS ($p < .05$, $r = .27$), is the perception of the students of their own involvement in the class. The next

highest correlations are with Teacher Support (.26), Task Orientation (.26), and Order and Organization (.25). These subscales suggest that in orderly classrooms where students are involved in their tasks, the reading achievement will be greater.

Table 4

PARTIAL CORRELATIONS OF THE CLASSROOM ENVIRONMENT SCALE
WITH READING ACHIEVEMENT*
(N = 718 students in 36 classrooms)

<u>Subscales</u>	<u>r</u>	<u>p</u>
Involvement	.27	.05
Affiliation		
Teacher support	.26	.06
Task orientation	.26	.06
Competition		
Order and organization	.25	.06
Rule clarity	.17	.16
Teacher control		
Innovation	.18	.13

*Spring 1976 CTBS reading scores were held constant.

Apparently, students do better in classrooms where they receive teacher support, where they are involved and task oriented, and in classrooms that they perceive have order and organization. They come to school more frequently when they feel friendly toward the other students and when the teachers make classroom rules clear. Students in basic skills classrooms apparently do not enjoy or prosper in disorderly classrooms.

Student Ratings of Instructors

The Student Rating Scale of Instructors was also read aloud to the student by an SRI examiner. It has 16 items in 4 subscales. Table 5 displays the partial correlations of these subscales with Spring 1976 CTBS scores and absence data.

Table 5

PARTIAL CORRELATIONS OF STUDENT RATINGS OF INSTRUCTORS
WITH READING ACHIEVEMENT*
(N = 713 students in 36 classrooms)

<u>Subscales</u>	<u>r</u>	<u>p</u>
Professionalism	.35	.02
Individual attention	.41	.006
Fairness	.27	.05
Student enjoys class	.33	.02

* Spring 1976 CTBS reading scores were held constant.

All four of the subscales are significantly related to reading achievement. The strongest relationship is between the students receiving individual attention and reading achievement. The items comprising each subscale are identified in Appendix B. These findings suggest that in classrooms where students' opinions of their teachers' professional ability is higher, where the students experience more individual attention, where they enjoy the class, and find the teacher to be fair, reading achievement is greater.

The findings from the correlations of reading achievement with the observed process variables (see preceding section) suggested that students did less well in classrooms where the teachers spent more time working with one student at a time. The student ratings suggest that students prosper more when the teacher gives more individual attention. This seeming contradiction can be understood if we examine the item in the student rating subscale. Here we find such perceptions as "cares what I think;" "listens to me." It may be that the subscales describe a quality of time spent with individuals rather than the amount of time spent.

Stepwise Regression

Because so many process variables were significantly correlated with achievement, stepwise regressions were computed to see whether any particular variables accounted for a significant amount of test score variance when the differences in pretest scores were reduced to zero.

A total of 81% of the variance in posttest scores was explained in a stepwise regression analysis when the pretest scores were entered into the equation first. Pretest scores accounted for 73% of the test score variance (see Table 6). Only two process variables explained a significant portion of variance (regression coefficient significant at $F > .05$): corrective feedback for behavior, 5%, and positive behavior, 3%. It would seem the more teachers had to use corrective feedback for student behavior, the less time they could spend on teaching reading. The all-positive-behavior variable indicates that relationships in the classroom are pleasant, i.e., students and teachers smile at each other or teachers are supportive and friendly. This suggests a classroom environment that is smoothly managed.

Table 6

STEPWISE REGRESSION OF POSTTEST ON
PRETEST AND PROCESS VARIABLES
(N = 36 classrooms)

	<u>R²</u>	<u>Variance Explained</u>	<u>b</u>
Pretest score	.73	.73	.97
Variable 93, corrective feedback for behavior	.78	.05	-.29
Positive behavior	.81	.03	.20

Since the pretest accounted for so much of the posttest score, we wanted to see what variables were related to the posttest score, if the pretest was not entered in the equation. By rerunning the stepwise regression without the pretest, we were trying to examine the change in the predictive power (R^2) of the new equation, i.e., by allowing the effect of the pretest to remain, a wider range of classroom scores might be related to classroom process since removing pretest scores has a leveling effect on the data.

"Heterogeneous grouping," which is not considered a process variable but rather a descriptor of the group, explains 36% of the test score variance. The teacher teaching the entire class (not individuals or small groups) was the process variable that explained the most variance, 27% (see Table 7). "Teacher using workbooks in instruction" explained another 6% of variance. Two student rating subscales--"teacher rated professional" and "teacher rated innovative"--each explained 5% of the variance. "Punishing" and "negative behavior" each explained 4% of the variance. The last three variables have a negative relationship with reading achievement (see table 3).

Table 7
STEPWISE REGRESSION OF
POSTTEST AND PROCESS VARIABLES

<u>Variable Number</u>	<u>Description</u>	<u>R^2</u>	<u>Variance Explained</u>	<u>b</u>
	Heterogeneous groupings	.36	.36	.54
FMI 62	Teacher instructs the entire class in reading	.63	.27	.53
TDM2	Teacher instructs using workbooks	.69	.06	-.08
	Teacher rated professional (by student)	.74	.05	.46
	Teacher rated innovative (by student)	.79	.05	-.36
FMI 117	All negative interactions	.87	.04	-.47
FMI 130	Punishing behavior	.83	.04	-.65

Absence Rate

The absence rate of students in junior and senior high schools is a national problem. The range of average absence rates for the 40 classrooms with absence data is from 6 days per student per year to 35 days per student. The burden on the teacher and the learner is great when students are absent frequently.

Many reasons for absence from class can be cited: illness, work, care for younger siblings, expelled from school, doctor appointments, other school activities, and staying away from class with friends. Students are not necessarily absent all day; they go to some classes and not to others.

In the Follow Through Classroom Observation Evaluation 1972-73, we identified process variables that accounted for 67% of the variance in absence rate in Grade 3 classrooms. In classrooms where the students had more choice of materials, activities, and work groups, and where they could ask questions and talk to each other a little more, they were absent less often.

Based upon this prior research, we wanted to see whether some classroom variables at the junior and senior high level could be related to student absence rate.

Pearson Product Moment Correlation

Correlations were computed using all of the student rating subscales and selected classroom process variables with absence rate. Out of the 140 correlations, 14 were significant at $p \leq .05$. Variables whose relationship was significant at the $p \leq .05$ level are included on Table 8.

The subscale most related to low-absence rate is Affiliation. This suggests that students go to class more frequently when they feel that students in the class are friendly. (Affiliation items are listed in Appendix B.) This finding is interesting but not surprising. Most people at any age prefer classes where they know and like the other students. The second subscale most related to low absence rate is Rule Clarity.

Table 8

CORRELATION OF ABSENCE RATE AND PROCESS VARIABLES
(N = 35 Classrooms)

Variable Number	Description	r	p
A	Affiliation	-.60	.001
RC	Rule clarity	-.34	.05
TEM9	Teacher discusses reading	-.34	.05
TLM9	Teacher manages classroom	-.36	.05
IAM8	Students use leisure reading books	+.34	.05
IGM5	Students do written assignments in reading kits	-.41	.01
10	Students ask teachers questions about the task	-.32	.05
77	All teacher's acknowledgment given to students' performance	-.32	.05
85	Teacher praises and acknowledges students for reading	-.38	.05
86	Teacher acknowledges student for reading and other tasks	-.33	.05
87	All praise and acknowledgment to students	-.36	.05
90	Guiding corrective feedback	-.35	.05
116	All positive interactions	-.32	.05
120	All warm supportive interactions	-.33	.05

These data suggest that in classrooms where teachers were warm and supportive (Var. 120) and acknowledged or praised students for achievement in reading or task-related work (Var. 77, 86 and 87) the students are absent less often. Variables 77 and 86 are a subset of Variable 87. In classrooms where the teacher spent time managing (Var. TLM9), held discussions (Var. TEM9), and made the rules clear (Var. RC), the students were absent less often.

Students were absent less often in classrooms where they more frequently felt the class was friendly (Var. A), asked questions about the task (Var. 10), and did written assignments from reading kits (Var. IGM5).

An unanticipated relationship was found between leisure reading and absence rate. Students came to class less frequently in classrooms where they more frequently engaged in leisure reading. It would seem more likely that students would enjoy leisure reading and be absent less frequently in such classrooms. However, perhaps such classrooms lacked rule clarity and more leisure reading may have been the result of less structure. Leisure reading may relate to absence differently in sub-groups of classrooms depending upon reading ability.

The process variables related to absence rate in the Basic Skills study are somewhat different than those found in Follow Through. In the Follow Through study, students were absent less often when they were in open class structures, that is, when they had more choice about activities and made more social comments to each other. In the Basic Skills study, the students were absent less often when they felt that other students were friendly, when the rules were clear, when they received positive reinforcement from teachers, and when they could ask questions about the reading tasks. Variables from both studies describe a warm, supportive environment.

Correlations should of course be interpreted with considerable caution. The intercorrelation of several variables can be expected to be very high. Absence rate will be more thoroughly studied in subgroups of classrooms.

Stepwise Regression

Stepwise regressions were conducted to see how much variance in absence rate could be explained by process variables. Three variables were identified which accounted for 55% of the variance in absence rate (regression coefficient significant at $F > .05$, see Table 9).

Table 9

VARIABLE PREDICTING ABSENCE RATE

Variable	Cumulative			
	<u>r</u>	<u>b</u>	<u>R²</u>	<u>p ></u>
Affiliation	-.62	-.50	.39	.001
Individual students working with reading kits	-.43	-.37	.48	
Students asking questions about task-related work	-.29	-.28	.55	

Affiliation from the Classroom Environment Scale accounts for 39% of the variance in absence rate. That is an impressive finding and should raise questions about classroom environments and scheduling of students to classes. Students were asked to rate their classes on the following characteristics:

- Students in this class get to know each other really well.
- Students in this class aren't very interested in getting to know other students.
- A lot of friendships have been made in this class.
- It's easy to get a group together for a project.

The scale may suggest a friendly classroom environment established by the teacher, or it may suggest that students had friends who were also enrolled in the class. In any event, the finding deserves further study.

Students working with reading kits explain another 9% of the variance. This variable indicates that students are absent less frequently when reading kits, such as the SRA Kit, are used. Such kits allow students to work independently and to progress at their own speed.

In classrooms where students are allowed or encouraged to ask questions about their tasks, they also are absent less frequently. This suggests a less teacher-directed environment, where students can initiate questions.

Intercorrelation of Variables

Because of the problem of multicollinearity, care should be taken in assigning too much importance to the individual predictor variables. Intercorrelations of all the study variables were computed and the complete set of tables are available at SRI. The intercorrelation of pretest scores, number of students, and the student ratings are shown on Table 10. Having more students in the class was negatively related to several interesting variables. The more students there were in classrooms, the lower were the classroom scores on student involvement, affiliation, and innovation. When there were more students in the class, they read aloud less often, the teachers less often used the chalkboard for instruction, and teachers less often conducted discussions about reading. In classrooms where students had higher pretest scores they tended to be less competitive, and feel more affiliation.

Many of the student rating subscales were found to be highly correlated with each other (see Table 10). If students rated a classroom high on involvement, they also rated it high on affiliation, teacher support order and organization, rule clarity, innovation, professionalism, individual attention, fairness, and enjoyment. Task orientation and teacher control were correlated with each other, but not with the other subscales. It is reasonable that in classrooms where teacher control was greater, the students were more task persistent. These findings suggest that perhaps only three student rating subscales are needed, i.e., involvement, order and organization, and task persistence.

Given the probability of highly intercorrelated independent variables, we believe it important to examine the possibility of subgroups of classrooms within the sample. Such a study of subgroups offers a better opportunity to identify classroom processes to use with particular groups of students.

Determination of Achievement Groups by Scattergram

The primary objective of the Basic Skills study is to examine the relationships between classroom processes and achievement in terms of

Table 10

INTERCORRELATION OF STUDENT-RATING SUBSCALES

	<u>PRE</u>		<u>STU</u>		<u>INV</u>		<u>AFF</u>		<u>TS</u>		<u>TO</u>		<u>C</u>		<u>CO</u>		<u>RC</u>		<u>TC</u>		<u>INNOV</u>		<u>PROF</u>		<u>IND</u>		<u>FAIR</u>		<u>ENJOY</u>	
	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p
Pretest																														
Number of students	.04	.42	-																											
Involvement	-.02	.45	-.31	.04	-																									
Affiliation	.36	.02	-.33	.03	.47	.00	-																							
Teacher support	-.07	.34	-.15	.20	.37	.00	.59	.00	-																					
Task orientation	.15	.21	.17	.17	.22	.12	-.14	.22	-.07	.36	-																			
Competitiveness	-.36	.02	-.26	.07	.03	.43	.24	.09	.13	.24	-.23	.45	-																	
Order and organization	.19	.15	-.26	.08	.78	.00	.27	.07	.41	.01	.42	.01	.10	.29	-															
Rule clarity	.16	.19	-.19	.14	.47	.00	.52	.00	.27	.06	.20	.13	.25	.08	.49	.00	-													
Teacher control	.18	.16	.02	.46	.17	.17	.23	.09	-.18	.16	.38	.02	.29	.05	.25	.08	.63	.00	-											
Innovation	-.17	.17	-.41	.01	.41	.01	.64	.00	.71	.00	-.25	.08	.39	.01	.19	.14	.28	.06	.14	.21	-									
Professionalism	.10	.28	-.23	.10	.56	.00	.42	.01	.63	.00	-.13	.44	.06	.37	.59	.00	.58	.00	.04	.41	.54	.00	-							
Individual attention	.04	.41	-.26	.07	.48	.00	.41	.01	.75	.00	-.16	.19	-.10	.29	.43	.01	.37	.02	-.24	.09	.56	.00	.86	.00	-					
Fairness	.07	.35	-.11	.28	.57	.00	.43	.01	.76	.00	-.33	.43	.02	.46	.58	.00	.47	.00	.04	.40	.51	.00	.70	.00	.68	.00	-			
Enjoyment	.03	.43	-.24	.09	.52	.00	.32	.03	.64	.00	-.63	.37	.06	.38	.50	.00	.28	.06	-.25	.08	.56	.00	.79	.00	.78	.00	.66	.00	-	

defining those processes most relevant to producing high test score gains. In order to explore these relationships, "gain" must be tempered by the level of the pretest. That is, it was hypothesized that a classroom with a pretest-posttest difference of 50 units and an initial low test level would differ in instructional processes from a classroom with an identical gain but a high pretest level. Therefore, a scattergram plotting posttest score versus pretest score was created to attempt a clustering of classes on the basis of pretest level and amount of test score gain (see Figure 1).

Four classrooms without either pretest or posttest information were omitted from the analysis. Three additional classes with mean test scores based on fewer than one-third of the students were eliminated because of a concern over the lack of representativeness of the class means.

The determination of achievement groups required several steps. First, a "no-gain" line was defined ($\text{posttest} - \text{pretest} = 0$); that is, there was no difference between pre- and posttest score means. Second, as consistent with other studies of this type (e.g., McDonald, 1976), (the "gain" line was set at one-third of the standard deviation of the mean class gain scores (13 units) above the no-gain line. The no-gain group, then, becomes those classrooms with posttest-pretest differences falling between the one-third standard deviation gain line and the no-gain line. (Note: Two classes slightly below the no-gain line--gain line scores of -7 and -11--were included in the no-gain group.) Third, test measurement error and the possibility of unstable classroom mean test scores (i.e., those classes with a small percentage of the total class having both pretest and posttest scores) make it impossible to classify some classrooms as either no-gain or gain. Given the probabilities of measurement error, why should one classroom with a gain of 12 units be classified as no-gain when another classroom with a gain of 18 units is allocated to a gain group? Therefore, "slight-gain group" was defined as those classrooms with posttest-pretest differences falling between one-third standard error (13 units) and one standard error (40 units). Fourth, the "gainers" were assigned to three groups on the basis of prescore levels: Group I, low pretest/high gain; Group II, moderate

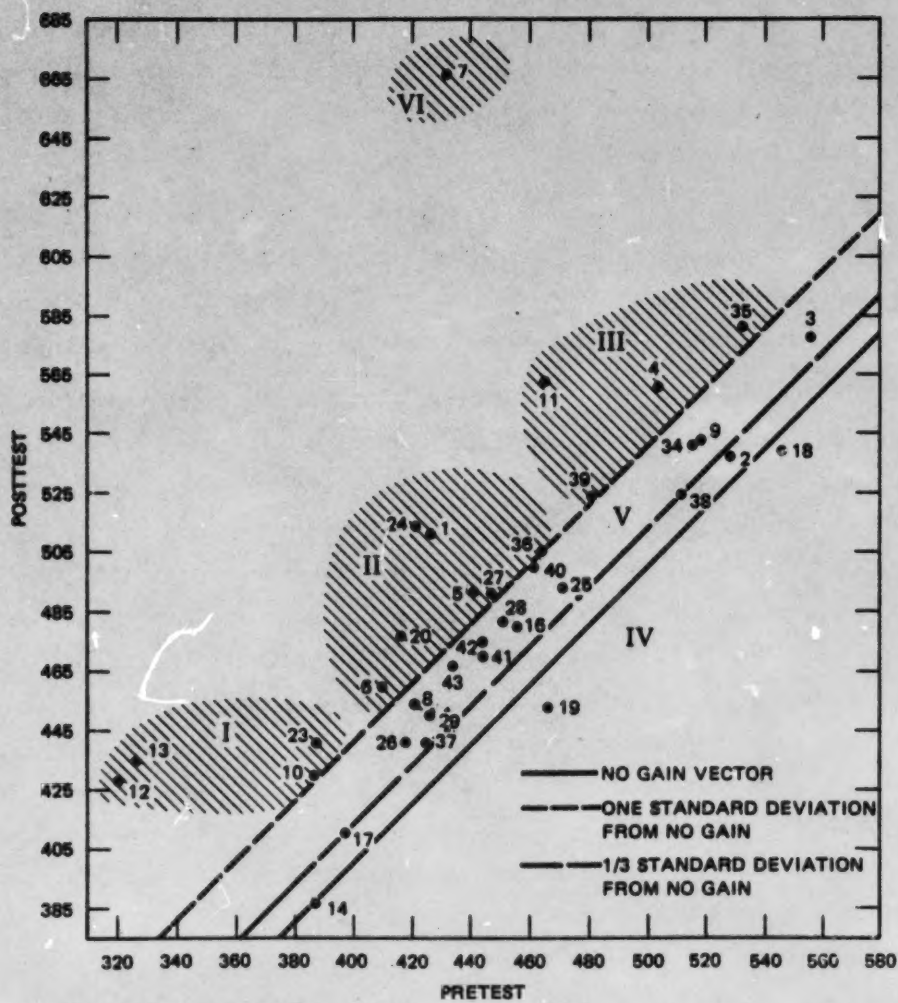


FIGURE 1 SCATTERGRAM OF PRETEST AND POSTTEST — CTBS SCORES

pretest/moderate gain; and Group III, high pretest/moderate gain (see Figure 1). Additionally, an outlier was identified (gain of 234), which will be presented as a special case study rather than arbitrarily forcing the class into an inappropriate group. The pretest/posttest scattergram resulted in the groups of classrooms shown in Table 11.

Table 11
NUMBER OF CLASSES IN EACH ACHIEVEMENT GROUP

Groups	Number of Classes
I Low pretest/high gain	4
II Moderate pretest/moderate gain	7
III High pretest/moderate gain	4
IV No gain	7
V Slight gain	13
VI Case study (medium high)	1

District demographic characteristics such as amount of money spent per student did not explain why some classrooms gained and others did not. No one group was made up of classrooms all from the same district, and the two largest districts had some classrooms in each of the five achievement groups.

Discriminant Function

In order to ascertain whether the groups defined by achievement and prescore level differed in structure, a discriminant analysis was conducted using the first four groups from Figure 1 (low pretest/high gain, moderate pretest/moderate gain, high pretest/moderate gain, no gain). We wanted to see if a discriminant analysis would confirm the legitimacy of the a priori groups. A stepwise discriminant procedure was conducted using an F-to-enter criterion of approximately .10. Based upon prior research findings and the utility of the variables in describing classroom

procedures, 100 variables were selected for the analysis by the principal researcher. The results showed that seven classroom process and demographic variables and two discriminant functions were sufficient to correctly classify all classrooms into the appropriate a priori groups (Table 12). Therefore, the four groups should differ in both pretest-posttest differences and classroom processes.

Table 12

CLASSIFICATION OF A PRIORI GROUPS
BY DISCRIMINANT ANALYSIS

Actual Group	Number of Cases	Predicted Group Membership (%)			
		I	II	III	IV
I Low pretest/high gain	4	100	-	-	-
II Moderate pretest/moderate gain	7	-	100	-	-
III High pretest/moderate gain	4	-	-	100	-
IV No gain	7	-	-	-	100

In conclusion, the discriminant analysis presented a statistical confirmation of the groups derived from Figure 1, providing a measure of confidence in proceeding with analyses to determine within-group composition and intergroup differences.

Analysis of Variance

In order to examine intergroup differences, one-way analyses of variance, using the same variables selected for the discriminant analyses, were conducted. Variables found to be significantly different at the .10 level were then chosen as discriminants of the four groups.

Because of the nature of a simultaneous comparison of the four groups in an analysis of variance, it was felt that some comparison between the no-gain group and the low pretest/high gain group, the moderate pretest/moderate gain group and the high pretest/moderate gain group might identify additional variables capable of explaining differences between the

gain groups and the no-gain group. Accordingly, the mean scores of each group calculated during the analyses of variance were examined.

The demographic nature of the five groups identified in Figure 1 is described on Table 13. The case study has a gain of 234 points which clearly makes it an outlier. The no-gain group has an average of 22 students enrolled while the low pretest/high gain group had an average of 26 students. The case study class which gained the most had the most students enrolled (27). Thus, class size does not account for class gain nor does absence rate explain the difference in gain. The no-gain group has an average absence of 10 days; two of the gain groups had higher absence rates; the case study with highest gain has an average of 10 days absent.

The group which had the greatest test score change (Group I, low pretest/high gain) does not have heterogeneous classrooms, i.e., no students in these classrooms were performing above the 49th percentile on the pretest CTBS. Since the groups with homogeneous classes gained the most, this may be a factor in explaining the difference in gain scores and could have policy planning implications.

With these descriptions of the groups in mind, we will proceed to describe the instructional processes that distinguish each gain group from the no-gain group.

Group I--Low Pretest/High Gain

The four teachers who were able to take a group of low-performing students and assist them in improving their achievement by an average of 78 points deserve special study. What processes those four teachers were using in common that were different from the processes used in the no-gain classrooms are of great interest.

With the difference in group size (seven classrooms in the no-gain group and four classrooms in the low pretest/high gain group), the statistical test of difference in the means may not identify all of the meaningful differences between the processes used by teachers in the two groups. Therefore, Table 14 which compares the two groups, includes

Table 13

DEMOGRAPHIC CHARACTERISTICS OF THE ACHIEVEMENT GROUPS

Group	Number of Classes	Number of Students		Heterogeneous Groupings		Days Absent		Pretest Scores (CTBS)		Post test Scores (CTBS)		Gain	
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
I Low Pretest/ High Gain	4	26.50	2.08	0	0	13.77	4.39	354.43	35.65	433.12	5.80	78.69	33.74
II Moderate Pretest/ Moderate Gain	7	23.00	7.37	.03	.06	15.86	4.71	423.25	19.30	492.77	20.00	60.52	21.20
III High Pretest/ Moderate Gain	4	25.50	4.04	.36	.24	8.80	5.67	495.71	29.50	557.91	24.93	62.20	25.46
IV No Gain	7	22.29	4.07	.10	.12	10.19	6.44	465.26	64.83	470.63	63.16	5.37	11.14
V Slight Gain	13	19.69	8.11	.14	.14	11.71	5.51	462.78	42.69	490.66	40.57	27.88	5.26
VI Case Study Classroom	1	27.	--	.00	--	10.00	--	432.57	--	666.76	--	234.19	--

Table 14

MEANS AND STANDARD DEVIATIONS
FOR GROUP I--LOW PRETEST/HIGH GAIN AND GROUP IV--NO GAIN

Variable Number	Description	Group I (N=4 Classrooms)		Group IV (N=7 Classrooms)	
		$\bar{X}$	SD	$\bar{X}$	SD
	Affiliation	2.37	.31	3.08	.58
Snapshot					
TBM1	Read aloud--textbook	8.54	10.34	2.94	7.79
TBM2	Read aloud--workbook	--	--	1.88	4.98
TCM2	Make assignments with workbook	--	--	2.72	4.91
TCM9	Make assignments with no material	3.99	5.55	1.66	4.38
TDH1	Instructing with textbook	3.07	3.55	0.87	2.31
TDH2	Instructing with workbook	8.14	9.46	5.89	6.74
TDH7	Instructing with chalkboard	--	--	2.87	7.60
TDH1	Discussion with textbook	--	--	4.83	12.77
TFM2	Drilling with workbook	--	--	7.73	20.30
TGM2	Written assignments with workbook	10.75	8.62	4.59	5.95
THH2	Evaluation with workbook	5.61	11.23	1.34	2.29
THH3	Giving test, quiz with textbook	5.18	10.36	1.08	2.86
THH9	Managing classroom with no material	1.17	2.33	6.71	4.99
THH9	Transition with no material	3.22	3.72	0.99	2.61
TFM3	Disciplining with test	--	--	1.08	2.86
IAM1	Silent reading with textbook	1.27	2.54	0.19	0.50
IAM2	Silent reading with workbook	2.73	3.16	--	--
IAM8	Reading aloud--leisure	--	--	2.28	4.13
IGH2	Written assignments with workbook	4.84	8.58	13.21	14.97
IGH5	Written assignments with reading kit	--	--	7.95	14.04
ILM3	Classroom management with test	3.31	6.62	--	--
IKM9	Social interaction with no material	--	--	1.07	1.46
FMI					
5	Adults--interaction with individuals	193.50	66.22	288.29	74.12
6	Adults--interaction with entire group	55.50	38.69	33.00	49.93
7	Adults--interaction with entire class	141.75	112.74	114.86	80.08
54	Student reading aloud	121.00	156.92	60.57	82.72
56	All adult instruction, nontask	1.25	2.50	22.57	36.17
63	Instructions from a machine	--	--	48.14	82.26
74	Adult acknowledges students for reading	7.25	4.19	22.14	20.70
88	Adult gives corrective feedback by probing, task, or reading	2.75	1.71	11.00	11.02
91	Adult gives corrective feedback by task or reading	9.00	5.60	37.57	15.24
92	Adult gives negative corrective feedback for task or reading	--	--	0.43	0.79
94	Adult gives negative corrective feedback for behavior	--	--	8.14	13.98
96	Student not responding to adult, task or reading	--	--	3.43	2.94
106	Adult movement while interacting with students	60.00	35.41	43.71	31.94
111	All classroom interactions related to reading	663.50	61.39	639.29	120.87
112	All classroom interactions, related to task	43.75	55.88	16.29	31.99
113	All classroom interactions related to student behavior	18.00	22.21	63.00	79.51
124	All humorous interactions	--	--	1.00	1.15
125	All positive or humorous interactions	29.50	25.68	42.29	29.70
126	Adult offers students a choice of materials or activities	--	--	0.29	0.76
129	Students comment to adult regarding classroom assignment	10.75	5.68	3.86	3.67
133	Student does not know answer; adult guides student	--	--	0.43	0.79
139	Student response unacceptable, adult tells student answer	0.25	0.50	1.86	1.35

variables which are statistically significant as well as variables that occur in one group but have zero occurrence in the other group, even though significant difference is not indicated. Variables that are educationally meaningful and illustrate classroom organization and interaction patterns are included for descriptive purposes.

In the low pretest/high gain group, students read aloud with their teachers more frequently from textbooks than did the no-gain students. In fact, FMI Variable 54 (student reading aloud) indicates that the low pretest/high gain group read aloud twice as often as the no-gain group. These students also read silently from their workbooks more often. Teachers of the low pretest/high gain group more frequently provided instruction using the textbooks and workbooks. These teachers more often worked with the students on their written assignments, moved around the room, helped students evaluate their work, and gave them quizzes.

Teachers in the no-gain classrooms more often used the chalkboard during instruction, had discussion about the text, and performed drill and practice activities. The no-gain teachers more frequently gave verbal assignments for workbooks and the students performed these assignments alone, while the teacher graded papers or did other classroom management activities.

Students in the no-gain classrooms worked more often than the students in the low pretest/high gain group with reading kits, read from leisure reading books, did written assignments alone, and received instruction from a machine. Students in the no-gain classrooms felt more affiliated with each other, made more social and humorous comments, had more positive and more negative interactions, and received more correction for behavior than did students in the low pretest/high gain classrooms.

Teachers from the low pretest/high gain classrooms interacted with individual students 194 times, small groups 55 times, and the entire group 142 times. The no-gain classroom teachers interacted more frequently with individual students and less often with small groups or the entire class than did teachers of the low pretest/high gain group.

The nature of the interactions for the two groups was similar in the number of reading interactions and task-related statements, although they occurred slightly more often in the low pretest/high gain group. The no-gain group had nearly four times as many interactions regarding behavior as the low pretest/high gain group.

In summary, teachers in the low pretest/high gain group seemed to have several activities going on in their classrooms during the class period. The students receive verbal instruction on their task and workbooks. The teachers read aloud with the students, students read silently in workbooks, teachers monitored the seat work, moved around the classroom, helped students with assignments, provided evaluation and feedback. These teachers also quizzed their students more frequently than did all other groups of teachers.

Group II--Moderate Pretest/Moderate Gain

The seven teachers in this group averaged about the same number of students in their classrooms, as did the seven teachers in the no-gain group. Both groups had some heterogeneous grouping, but students in this group averaged 5 days more absent than the no-gain students (see Table 13).

The students in this group rated their classrooms higher on task-orientation, order and organization, and enjoyment than all other groups (Table 15). These students never read aloud from textbooks and seldom from workbooks. They read silently from workbooks and leisure books and worked on written assignments more frequently than all other groups of students.

The teachers in this group instructed their students using audio-visual equipment more often than the no-gain teachers. In general, they provided more instruction and feedback or evaluation of the students' written assignments in workbooks. They offered more statements about assignments and organization procedure than did teachers in all other groups (Var. 144).

Table 15

MEANS AND STANDARD DEVIATIONS
FOR GROUP II--MODERATE PRETEST/MODERATE GAIN AND GROUP IV--NO GAIN

Variable Number	Description	Group II (N=7 Classrooms)		Group IV (N=7 Classrooms)	
		$\bar{X}$	SD	$\bar{X}$	SD
	Affiliation	2.44	0.53	3.08	0.58
	Task orientation	3.25	0.34	2.61	0.79
	Order and organization	2.34	0.93	1.48	0.89
	Enjoy class	4.05	0.34	3.59	0.64
Snapshot					
TBM1	Read aloud--textbook	--	--	2.94	7.79
TBM2	Read aloud--workbook	2.71	7.16	1.88	4.98
TCM2	Make assignments with workbook	0.98	2.59	2.72	4.91
TDM6	Instructing with audiovisual equipment	6.37	11.06	2.00	5.29
TDM9	Instruction with no material	3.17	3.99	--	--
TFM2	Drilling with workbook	1.01	2.67	7.73	20.30
THM2	Evaluation with workbook	3.19	6.37	1.34	2.29
THM9	Managing classroom with no material	1.82	3.11	6.71	4.99
TFM3	Disciplining with test	--	--	1.08	2.86
IAM1	Silent reading with textbook	--	--	0.19	0.50
IAM2	Silent reading with workbook	4.28	4.98	--	--
IAM8	Reading aloud--leisure	6.38	12.31	2.28	4.13
IFM2	Drilling with workbook	--	--	2.26	5.98
IGM2	Written assignment with workbook	25.11	17.14	13.21	14.97
IGM5	Written assignment with reading kit	1.63	3.71	7.95	14.04
IKM9	Social interaction with no material	0.28	0.49	1.67	1.46
ION9	Uninvolved with no material	--	--	0.45	0.77
FMI					
5	Adults--interaction with individuals	249.86	65.39	288.29	74.12
6	Adults--interaction with entire group	8.14	8.97	33.00	49.93
7	Adults--interaction with entire class	162.00	89.97	114.86	80.08
8	Student asks direct questions about task or reading	23.29	10.86	56.71	34.82
9	Student asks direct questions about reading only	22.71	11.28	54.00	30.40
11	All students ask direct questions	25.14	12.19	62.71	35.42
32	Student complies with behavioral correction or reinforcement	3.14	5.43	14.43	13.05
34	Student responds to adult command, request or direct question; task or reading	75.86	17.30	61.00	25.46
57	All adult instruction, reading	240.14	114.55	172.86	75.28
64	Student presents information to group, reading	4.86	8.78	--	--
74	Adult acknowledges students for reading	27.43	11.16	22.14	20.70
87	All adult praise and support	40.43	10.94	32.14	22.98
91	Adult gives corrective feedback by task or reading	46.29	16.40	37.57	15.24
93	Adult gives corrective feedback for behavior	5.43	6.79	34.43	46.45
94	Adult gives negative corrective feedback for behavior	0.14	0.38	8.14	13.98
106	Adult movement while interacting with students	45.00	48.96	43.71	31.94
111	All classroom interactions related to reading	650.00	128.60	639.29	120.87
112	All classroom interactions, related to task	10.00	19.11	16.29	31.99
113	All classroom interactions related to student behavior	10.57	15.98	63.00	79.51
116	All positive interactions	15.57	19.47	20.14	14.58
119	All negative interactions	0.86	1.57	25.71	43.40
124	All humorous interactions	0.86	2.27	1.00	1.15
131	Student does not answer, adult gives corrective feedback, probe	2.57	2.70	0.43	0.53
138	Student response unacceptable, adult rephrases question	3.29	2.36	1.43	1.40
139	Student response unacceptable, adult tells student answer	2.43	2.88	1.86	1.35
144	All interaction involve with organization or assignments	170.00	104.18	152.00	91.00
156	Adult acknowledges student response to direct questions	15.00	7.21	10.29	13.77
160	All adult interactions with intruder	4.00	4.62	8.71	7.52
161	Adult begins interaction with a different student	94.14	48.61	72.00	35.96
162	Different student starts interaction with adult	30.86	14.29	76.86	28.49

Compared with those in the no-gain classrooms, these teachers less often directed their communication toward individual students or small groups, and more often toward the total class. More of the interactions were regarding reading. They had fewer interactions about other tasks or behavior than all other groups.

Students in the moderate pretest/moderate gain group seldom initiated questions or comments. They more often responded to the teacher's questions and received acknowledgment and praise for reading work. They also received more corrective feedback for reading work. If one student's answer was not correct, the teacher may have told the answer or quickly asked another student to answer. Several feedback techniques were used. If a student said, "I don't know," the teacher was likely to ask the student more probing questions. For all of the question, response, and feedback reading variables, the teachers in the moderate pretest/moderate gain group were rated highest.

By comparison, the no-gain classrooms were more social. The students rated them higher on affiliation; they made more positive, negative, and humorous comments; they received more correction for behavior. The teachers spent about as much time in grading papers or management tasks as in drill and practice activities. They provided about two-thirds as much reading instruction as did teachers of the moderate pretest/moderate gain group.

In summary, teachers in the moderate pretest/moderate gain group seemed to provide reading instruction to the total group. Students did written assignments in workbooks or read in leisure books. Students received evaluation of their work. Teachers asked questions; students responded and received feedback. The classrooms appeared to be on-task with very little misbehavior occurring.

Group III--High Pretest/Moderate Gain

Four teachers had students who entered with very high scores and made moderate gains. Students in these classrooms were more heterogeneously grouped than in the no-gain classrooms. They had, on the

average, a few more students than the no-gain classrooms, but the students in this group were absent less often (see Table 13).

The most characteristic thing about the high pretest/moderate gain group is that subjects other than reading were being taught (see Table 16). Any subject matter other than reading was coded as "task." For the most part, this included social studies and some science. The teachers were teaching reading within the subject area. Thus we see teachers and students asking more task questions (Variables 20 and 29) in this group and having more task interactions (Variable 112) than in other groups.

The students did read aloud from textbooks, perhaps social studies, read silently from reading kits and infrequently from leisure books. They played nonreading but task-type games such as social studies simulation games.

The teachers instructed the students using textbooks and audiovisual equipment more frequently than teachers of the no-gain group. They did not make assignments in workbooks, but they did assign work in reading kits. They spent some time managing--grading papers and the like--but did not quiz the students during the period of observation.

The teachers focused their communication more toward the total group than toward the individual or small group. If the teachers started an interaction with a student, they were most likely to complete the interaction than to switch to a different student (Var. 161). These teachers also more often listened to students and observed them than did teachers of the other groups.

Although social comments (Var. 69) were made at a higher rate and more humor was expressed (Var. 124) in the classrooms of this group, there was very little misbehavior (Var. 32, 93) and very few negative interactions (Var. 119).

These teachers were interrupted by intruders as much as were the no-gain teachers (Var. 160). Perhaps the scores of their students would have been higher if there were fewer interruptions. We did find that, overall, the intrusions had a negative relationship with gain in reading.

Table 16

MEANS AND STANDARD DEVIATIONS
FOR GROUP III--HIGH PRETEST/MODERATE GAIN AND GROUP IV--NO GAIN

Variable Number	Description	Group III (N=4 Classrooms)		Group IV (N=7 Classrooms)	
		$\bar{X}$	SD	$\bar{X}$	SD
	Task orientation	3.07	.31	2.61	.79
Snapshot					
TBM1	Read aloud--textbook	7.69	15.38	2.94	7.79
TBM2	Read aloud--workbook	--	--	2.72	4.91
IDM1	Instructing with textbook	7.50	10.52	.87	2.31
IDM6	Instructing with audiovisual equipment	9.88	19.76	2.00	5.29
IDM7	Instructing with chalkboard	--	--	2.87	7.60
TFM2	Drilling with workbook	--	--	7.73	20.30
TGM5	Written assignment with game or manipulative materials	4.01	8.02	1.27	3.35
TIM3	Giving test, quiz with textbook	--	--	1.08	2.86
TFM9	Managing classroom with no material	3.73	4.31	6.71	4.99
TFM3	Disciplining with test	--	--	1.08	2.86
IAM5	Reading silently with reading kit	5.62	11.23	3.17	8.38
IAM8	Reading aloud--leisure	.53	1.07	21.28	4.13
IJM4	Nonreading learning with game or manipulative materials	5.58	11.16	--	--
FMI					
5	Adults--interactions with individuals	175.75	46.51	288.29	74.12
6	Adults--interactions with entire group	50.75	87.55	33.00	49.93
7	Adults--interactions with entire class	195.25	106.30	114.85	80.00
10	Student asks direct questions about task	17.50	26.89	2.71	6.75
20	Teacher asks questions about task	25.75	39.45	1.00	1.15
29	Student responds to an adult about reading	54.25	38.37	87.71	30.07
32	Student complies with behavioral correction or reinforcement	7.25	4.57	14.43	13.05
56	All adult instruction, nontask	4.00	2.83	22.57	36.17
57	All adult instruction, reading	113.75	103.66	172.86	75.28
58	All adult instruction, task	211.25	127.34	175.14	78.81
61	Adult instructs small group, task or reading	36.50	72.33	14.28	35.62
62	Adult instructs entire class, task or reading	138.00	95.93	66.14	55.18
69	All social comments	26.25	31.31	16.85	15.00
93	Adult gives corrective feedback for behavior	10.25	6.75	34.43	46.44
109	All adult listening to student	26.50	26.44	15.28	26.16
110	All adult observing student	45.25	48.29	17.57	19.26
111	All classroom interactions related to reading	492.25	316.90	639.29	120.87
112	All classroom interactions related to task	215.25	312.55	16.29	31.99
113	All classroom interactions related to student behavior	24.00	10.98	63.00	79.51
119	All negative interactions	2.50	3.00	25.71	43.40
120	All warm supportive interactions	2.50	2.65	9.57	9.41
124	All humorous interactions	8.00	12.19	1.00	1.15
129	Student comments to adult regarding classroom assignment	8.00	6.06	3.86	3.67
160	All adult interaction with intruder	8.25	7.41	8.71	7.52
161	Adult begins interaction with a different student	53.75	24.86	72.00	35.96
162	Different student starts interaction with adult	80.50	38.21	76.86	28.49

An analysis of the test scores indicates that each of the four classrooms in this group was heterogeneously grouped. One-fourth to one-half of the students in the classes scored over the 49th percentile on their pretest. We removed these high-scoring students from the sample to see whether their gain represented a disproportionate gain for the class; it did not. In fact, in all classes, the mean gain score went up when these higher-pretest students were removed (see Table 17). This finding suggests either that the students came near the ceiling of the test and could gain very little more or that higher-scoring students may not continue to accelerate their growth in heterogeneously grouped classrooms.

Table 17

GROUP III--HIGH PRETEST/MODERATE GAIN
WITH AND WITHOUT HIGH-SCORING STUDENTS

Class	Gain	
	With Students Over 49th Percentile	Without Students Over 49th Percentile
114	54	58
142	88	99
612	35	50
621	19	41

Group V--Slight Gain

The 13 classrooms that had very slight gain were separated from the 7 no-gain classrooms. Analysis of the differences in the processes used in the two groups indicated that teachers in the slight-gain group spent less time in management tasks, such as grading papers, during class time (Var. TLM9) than did no-gain teachers. They also spent less time socializing (Var. IKM9, 40, 69). The students in the slight-gain group demonstrated less negative behavior, less humor, and received less negative feedback than did students in the no-gain group. Students in the slight-gain group less often made unacceptable responses to teacher requests, less often said they did not like the assignment, and less often had different students interrupt the teacher (Var. 137, 140, 162).

On a continuum of variables from no-gain to high-gain, the slight-gain group falls in place. All of the variables that are negatively related to achievement occur infrequently in the high-gain group, occur more frequently in the slight-gain group, and most frequently in the no-gain group.

Group VI--Case Study Classroom

The case study provides an interesting contrast for the classes that started with high pretest and made moderate gains. This class gained over 200 standard score points. They entered at a moderate level within the Group II range and achieved higher scores than any of the Group III classrooms. The case study group had more students enrolled than most groups. The students were similar in their initial competence, i.e., none scored over the 49th percentile on the pretest (see Table 13).

All 27 students gave their teacher top rating for fairness and enjoyment of the class. They also gave higher ratings for teacher support, order and organization, professionalism, and individual attention than students in other groups gave their teachers.

The most outstanding feature of the case study is that it scored higher than all other groups by over 100 points on the number of reading interactions occurring in the classroom. This indicates that the teacher and students were involved with the reading task more often than all other classes were. See Table 19 for the case study classroom means of process variables.

The students in the case study read aloud from workbooks more frequently than students in all other classrooms (Var. TBM2, IBM2, 54) and did written assignments in workbooks about as frequently as students in the moderate pretest/moderate gain group.

More frequently than all other tasks, the teacher discussed assignments and instructed the students in reading using a chalkboard (Var. TDM9) or no materials. As in the other groups, the teacher directed interactions to individual students more often than to small groups or the entire class; the pattern of this communication is similar to the

moderate pretest/moderate gain group. The pattern of the teacher providing instruction in reading, asking a question about reading, students responding and receiving praise occurred more frequently in this classroom than in all others (Var. 19, 29, 57, 81). The teacher seems to have called on specific students, one after the other, to respond, for there were very few volunteers who responded or different students who initiated interactions (Var. 39, 162). The pattern was similar in the moderate pretest/moderate gain group, but it occurred more frequently in the case study classroom.

The teacher in the case study classroom made many comments about the assignments while the students made none at all (Var. 128, 129). The students were well-behaved: there was no negative behavior or refusal to comply with the teacher's request, nor were any students sent from the classroom. Although no humor was recorded in the case study classroom, more positive behavior was recorded than in any other groups (Var. 116, 123).

The case study teacher used methods similar to those which were found to be efficient in the low pretest/high gain group, e.g., reading aloud. This teacher also used methods like those of the moderate pretest/moderate gain teachers, who had students that entered with moderate test scores similar to those of students entering the case study classroom. Variables distinguishing the moderate pretest/moderate gain group are the direct teaching variables (teacher asks a question, student responds, and teacher provides feedback); the case study classroom used this pattern even more frequently. As in the low pretest/high gain group and the moderate pretest/moderate gain group, the case study students were rarely off-task; they exhibited very little misbehavior. Thus, efficient methods highlighted by both the low pretest/high gain group and the moderate pretest/moderate gain group were used by the case study teacher. Group III, the high pretest/moderate gain group, was distinguished by its use of other subject areas as a vehicle for reading; the case study teacher did not use that method (see Table 18).

Table 18

MEANS FOR GROUP VI--CASE STUDY

Variable Number	Description	$\bar{X}$
<u>Snapshot</u>		
TBM2	Read aloud--workbook	19
TDM7	Instructing with overhead chalkboard	14
TDM9	Instructing with no material	6
TEM9	Discussion with no material	7
IBM2	Student reading aloud with workbook	6
IGM2	Student doing written assignment with workbook	19
<u>FMI</u>		
5	Adult interactions with individuals	243
6	Adult interactions with entire group	31
7	Adult interactions with entire class	195
9	Student asks direct questions about reading	22
19	Adult commands, requests, and directs questions to students about reading	118
29	Student responds to an adult about reading	101
39	Student voluntarily responds to all adult questions about task or reading	3
42	Adult responds to student requests or questions about reading	20
47	Adult responds to student questions or requests with a direct question or request about task or reading	1
54	Student reading aloud	168
57	All adult instruction, reading	243
61	Adult instructs small group, task or reading	18
62	Adult instructs entire class, task or reading	113
69	All social comments	24
74	Adult acknowledges students about reading	27
81	Adult praises students about reading	8
88	Adult gives corrective feedback by probing, task or reading	4
89	Adult gives corrective feedback by giving correct answer, task or reading	4
91	Adult corrective feedback, task or reading	8
92	Adult gives negative corrective feedback for task or reading	0
93	Adult gives corrective feedback for behavior	11
96	Student not responding to adult, task or reading	2
103	All students refusal to comply with adult request	0
105	All adult noninteracting with students, nonverbal	21

Table 18 (Concluded)

<u>Variable Number</u>	<u>Description</u>	<u>$\bar{X}$</u>
<u>FMI</u>		
106	Adult movement while interacting with students	47
109	All adult listening to student	22
110	All adult observing student	0
111	All classroom interactions related to reading	791
116	All positive interactions	60
119	All negative interactions	0
121	Student being sent from classroom for disciplinary reason	0
123	All student humorous interactions	0
128	Adult comments to students regarding classroom assignment	68
129	Student comment to adult regarding classroom assignment	0
161	Adult begins interaction with a different student	82
162	Different student starts interaction with adult	32

Teacher Profiles

Having identified a set of 50 process variables that are related to achievement in reading and to absence rate, we prepared a profile for each teacher on that set of variables. The 50 variables were standardized, and the individual teacher's standardized raw score was plotted against the standardized mean score for all 43 classes in units of 0.1 standard deviation (see Figure 2). The profile for Teacher 123, the case study, is presented in Figures 2 and 3. The mean for all teachers is indicated by the line down the middle of the figures.

The amount of recorded observed teacher behavior for each variable is compared to the mean. In this case, the teacher is higher than the mean on variable TBM2, students reading aloud from workbooks, and below the mean on students uninvolved (Figure 2). In Figure 3 we can see that this teacher is higher than the mean on positive behavior and lower on negative behavior.

TEACHER NUMBER: 123
FRESNO UNIFIED SCHOOL DISTRICT
GROUP: OUTLIER

			STANDARD DEVIATIONS FROM THE MEAN	
			-----NEGATIVE-----	++++POSITIVE++++
			< 211111111 100000000 0 000000001 111111112 >	
			< 0987654321 0987654321 >	< 1234567890 1234567890 >
VARIABLES				
TBM1	STUDENTS/TEACHER	READ ALOUD/TEXTBOOK		
TBM2	STUDENTS/TEACHER	READ ALOUD/WORKBOOK	X	
TCH2	TEACHER	ASSIGNMENT/WORKBOOK		X
TM1	TEACHER	INSTRUCT/TEXTBOOK	X	
TM2	TEACHER	INSTRUCT/WORKBOOK	X	
TM7	TEACHER	INSTRUCT/CHALKBOARD	X	
TM9	TEACHER	INSTRUCT/NO MATERIAL		X
TEH0	STUDENTS/TEACHER	DISCUSSION/NO MATERIAL		X
TFH2	TEACHER	DRILL/WORKBOOK		X
TGM2	STUDENTS/TEACHER	WRITING/WORKBOOK	X	X
THH2	TEACHER	FEEDBACK/WORKBOOK	X	
TIN3	STUDENTS/TEACHER	TEST	X	
TLH9	TEACHER	CLASS MANAGE/NO MATERIAL	X	X
THH9	STUDENTS/TEACHER	TRANSITION	X	
TPH3	STUDENTS/TEACHER	DISCIPLINE/TEST	X	
IAH1	STUDENTS	READ SILENT/TEXTBOOK	X	
IAH2	STUDENTS	READ SILENT/WORKBOOK	X	
IAH8	STUDENTS	READ SILENT/LEISURE READ	X	
IGH2	STUDENTS	READ ALOUD/WORKBOOK	X	
IGH5	STUDENTS	WRITING/WORKBOOK		X
IJH4	STUDENTS	WRITING/KITS	X	
IKH9	STUDENTS	NONREADING/GAMES	X	
IOH9	STUDENTS	SOCIAL	X	
		UNINVOLVED	X	

FIGURE 2 BASIC SKILLS TEACHER PROFILE — SNAPSHOT

**BASIC SKILLS TEACHER PROFILE
FIVE MINUTE INTERACTION**

TEACHER NUMBER: 123
FRESNO UNIFIED SCHOOL DISTRICT
GROUP: OUTLIER

		STANDARD DEVIATIONS FROM THE MEAN									
		-----NEGATIVE-----M++++++POSITIVE++++++									
		< 2111111111 1000000000 0 000000001 111111112 >									
		< >									
		< 0987654321 0987654321 0 1234567890 1234567890 >									
VARIABLES											
FM1005 ADULT TO STUDENT	VERBAL										
FM1006 ADULT TO GROUP	VERBAL										
FM1007 ADULT TO CLASS	VERBAL										
FM1008 STUDENTS	DIRECT QUESTIONS, TASK OR READING										
FM1019 ADULT	DIRECT QUESTIONS, READING										
FM1029 STUDENT	RESPONSE, READING										
FM1054 STUDENT	READ ALOUD										
FM1057 ADULT	INSTRUCTION, READING										
FM1063 MACHINE	INSTRUCTING STUDENTS										
FM1086 ADULT	PRAISE/SUPPORT, TASK/READ										
FM1090 ADULT	FEEDBACK/GUIDANCE, TASK/READ										
FM1091 ADULT	CORRECTIVE FEEDBACK, TASK/READ										
FM1111 ALL INTERACTIONS	READING										
FM1112 ALL INTERACTIONS	TASK										
FM1116 ALL INTERACTIONS	POSITIVE BEHAVIOR										
FM1119 ALL INTERACTIONS	NEGATIVE BEHAVIOR										
FM1124 ALL INTERACTIONS	HUMOR										
FM1126 ADULT	OFFERS CHOICE, ACTIVITY										
FM1129 STUDENT	COMMENTS, ASSIGNMENT										
FM1131 STUDENT/ADULT	STUDENT DON'T KNOW, ADULT PROBES										
FM1141 ADULT	CLASSROOM ASSIGNMENTS										
FM1143 ADULT	CLASSROOM ORGANIZATION										
FM1156 ADULT/STUDENTS	ADULT ACKNOWLEDGE, STUDENT RESPONSE										
FM1160	OUTSIDE INTRUSION										
FM1161 ADULT/DIFFERENT STUDENT	INTERACTIONS										
FM1162 DIFFERENT STUDENT	STARTS INTERACTION										

FIGURE 3 BASIC SKILLS TEACHER PROFILE — FIVE MINUTE INTERACTION

Each teacher in Phase I of the study will receive such a profile and an explanation of the meanings of the variables during Phase II of the study.

VII CONCLUSIONS AND IMPLICATIONS

The results of this study provide some interesting recommendations for teaching reading in the secondary schools. By separating the classes according to the pretest reading levels of students, the recommendations to teachers can be specific for the level of students they receive. Interesting contrasts were found in the classroom processes of the six subgroups that were identified according to the pretest scores and the gains they made.

Those teachers of students who entered class with low pretest scores and who made high gains in reading scores tended to quiz the students more frequently, have the students read aloud, work with small groups, and stay involved with the students.

Teachers of students who entered class with moderate pretest scores and who made moderate gains tended to use a direct teaching method in which they presented information, questioned specific students, got a response, and provided feedback. Positive feedback (praise, acknowledgment), probes, and guides were more efficient than negative feedback.

Teachers of students who entered with higher scores and made moderate gain used other subject matter as a vehicle for teaching reading. These higher achieving students could do more work on their own and teachers could afford to spend more time on management tasks than could teachers of students in the other two groups.

In classrooms where there was very little or no reading gain, the teachers tended to socialize more with the students, to grade papers in class more often, and to use negative corrective feedback for behavior.

Overall, from these analyses we have learned as much about what teachers ought not to do as we have about what they should do. For efficiency in teaching basic skills in reading, these findings suggest that teachers should:

- Have most interactions about reading
- Give instructions to the total group
- Ask questions of specific students (no volunteers)
- Provide positive feedback
- Control negative behavior
- Encourage positive behavior
- Use guides and probing questions when students do not know the answer.

Teachers should not:

- Grade papers during the class period
- Socialize or allow students to socialize
- Allow others to intrude and interrupt the class period
- Allow negative behavior
- Encourage humor during class time.

Many of the findings in this study are similar to those of other studies. The four hypotheses stated in our grant proposal and presented in the design section of this report were based upon previous research. All four of the hypotheses were supported:

- A positive relationship was found between reading achievement and feedback given to students for their responses to the teacher's questions. In the classrooms that gained the most in reading achievement, teachers more frequently gave praise or acknowledgment for correct responses and gave a positive type of corrective feedback through guiding or probing questions.
- The number of reading-related verbal interactions occurring in the classroom was positively associated with reading achievement.
- The number of social interactions had a negative relationship with reading achievement.
- A lower student absence rate was related to a positive, supportive classroom environment.

Some other findings from the study have policy implications. In particular, we refer to the practice of grouping students according to levels of achievement. In the past, many schools had well-defined "tracks" or "lanes." Once a student was assigned to the A, B, C, or D lane, the

student usually stayed on that track for the entire school experience. Many educators and parents felt this practice was very restricting and demoralizing for the low achievers. To replace the program that assigned students to achievement lanes, many schools adopted a policy of grouping students so that some high, medium, and low achievers could be found in each class. Theoretically, this sounds like a good practice, but in this study the classrooms that had students who were more like each other in reading achievement made more gain in reading. In heterogeneously grouped classrooms, the students who scored over the 49th percentile on the pretest made less gain than did students scoring below the 49th percentile on the pretest. Students in heterogeneously grouped classrooms spent more time making social comments and humorous statements, and spent less time on reading. Thus, our findings suggest that for greater efficiency in teaching and learning reading skills, students should be placed in classes with students of similar reading ability. This does not imply that classes in other subjects such as social studies, music, art, or science should be grouped by ability. We recommend that the rules followed by schools in placing students should be flexible and appropriate to the subject matter to be learned.

Surprisingly, the student ratings of teachers proved to be a very useful tool in providing information on classroom process. The correlations with gain in reading scores were as high or higher than those of the observation process variables. The ratings indicated that students performed better in reading in classrooms where they received teacher support, where they perceived that the teacher was well-prepared and professional, and where they felt the teacher cared about them as individuals. Students were absent less often in classes where they said the rules were clear and the other students were friendly. We recommend using this type of instrument with this age group of students to better understand their classroom experience.

In accordance with the revised plan for Phase II of the project, we will train teachers to use the processes identified in this study that are appropriate for the reading level of their students. If the training shows a positive effect upon student reading performance, the training program

can be used for preservice and inservice teacher training. It is clear from Phase I of this study that what teachers do in the classroom is related to student learning.

Appendix A

SRI SECONDARY OBSERVATION INSTRUMENT AND TRAINING MANUAL



SRI SECONDARY OBSERVATION INSTRUMENT

OBSERVER NUMBER ⁹

BOOKLET NUMBER ²

OBSERVER NAME _____

SRI USE

¹⁰
☐

B/W/S.S./A/O

¹¹ Date ¹⁶

M M D D Y Y

OBSERVATION PERIOD NO.

¹⁷

RECORD TYPE O

FOCUS PERSON NUMBER ²⁰

FOCUS PERSON NAME _____

CLASS _____

SCHOOL _____

DISTRICT _____

²⁵

STUDENT 1
TEACHER 2
AIDE 3

SRI USE

²⁶

☐

B/W/S.S./A/O

²⁷

☐

M/F

²⁸

☐

1-3

GRADE LEVEL

FROM

²⁹

TO

³¹

NO. STUDENTS

ENROLLED

³³

NO. STUDENTS

PRESENT

³⁵

TOTAL CLASS DURATION ³⁷

NUMBER OF TEACHERS WHO REGULARLY WORK IN CLASSROOM ⁴⁰ ☐

NUMBER OF AIDES WHO REGULARLY WORK IN CLASSROOM ⁴¹ ☐

SUBJECT IDENTIFIER:

⁴²

READING	1	SCIENCE	5
MATH	2	FINE ART	6
ENGLISH	3	CAREER ED.	7
SOC. SCI.	4		

CLASSROOM SNAPSHOT

TIME STARTED

(hr.)	(min.)

SEQ. NO.

1

ACTIVITY		MATERIAL																												SEQ. NO.		1					
		01				02				03				04				05				06				07				08				09			
		Textbook				Workbook Worksheet Paper				Test				Game/ Manipulative Materials				Reading Kit				AV Equipment Learning Machine				Overhead Chalkboard				Non-Curricular Leisure Reading				No Material			
		1	2	R	No.	1	2	R	No.	1	2	R	No.	1	2	R	No.	1	2	R	No.	1	2	R	No.	1	2	R	No.	1	2	R	No.	1	2	R	No.
01	Reading Silently																																				
02	Reading Aloud																																				
03	Making Assignments																																				
04	Instruction																																				
05	Discussion																																				
06	Practice Drill																																				
07	Written Assignments																																				
08	Evaluation, Feedback																																				
09	Taking Test, Quiz																																				
10	Nonreading Learning																																				
11	Social Interaction																																				
12	Classroom Management																																				
13	Transition																																				
14	Waiting																																				
15	Student Uninvolved																																				
16	Being Disciplined																																				

Column 1 : Number of students in group (1 2 S M L E)
 Column 2 : Identification of adult (T A O i)
 Column R : Reading skills being used (R)
 Column No. : Number of groups

For this Snapshot only:

No. of Adults in room

----------------------	----------------------

No. of Students in room

----------------------	----------------------

FIVE MINUTE INTERACTION

RECORD TYPE 2

21

SEQUENCE NO. 1

ACTIVITY STARTED

48

47

NO. OF STUDENTS WITH
FOCUS PERSON

1 STUDENT	1
2 STUDENTS	2
SMALL GROUP	3
MEDIUM GROUP	4
LARGE GROUP	5
EVERYONE	6
NONE	7

TIME STARTED

48 50
(hr.) (min.)

01

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

06

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

02

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

07

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

03

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

08

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

04

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

09

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

05

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

10

Who	To Whom	What	How
T A D	T A D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
M L E	M L E	M L E	M L E

SRI SECONDARY OBSERVATION INSTRUMENT

Training Manual

April 1977

A-7

DEFINITIONS OF CLASSROOM SNAPSHOT ACTIVITIES

The Classroom Snapshot is a record of the activities defined in Table A-1. The codes in the table are those recorded on the Secondary Observation Instrument.

Table A-1

CLASSROOM SNAPSHOT ACTIVITIES

Code	Activity	Description
01	Reading Silently	Students are reading silently to themselves as a group activity or are working on individual assignments.
02	Reading Out Loud	One or more students are reading a section from a play aloud or are reading a section from a book for the class to hear. Reading aloud is usually not done in unison; generally students take turns reading sequential sections from a book. The teacher or student(s) can also read aloud while the rest of the class members follow along in their own texts.
03	Making Assignments	Assignments are being made or adults and students are setting up before the actual lesson begins.
04	Instruction	An adult is informing some grouping of students about a subject.
05	Discussion	Discussion takes place regarding lecture material, assignments, problems.
06	Practice Drill	One or more students are verbally involved in repetitive or rote work. This activity must be differentiated from that of category 07, Work on Written Assignments.
07	Work on Written Assignments (Silent)	One or more students are writing papers, doing computation, or involved in any other silent written work.
08	Evaluation, Feedback	One or more students are receiving information or feedback on work they have completed or are being evaluated on their work preparatory to continuing the assignment.
09	Taking Test, Quiz	One or more students, either as a group or as individuals, are taking a test or quiz about the subject matter.
10	Nonreading Learning Activity	One or more students are involved in an academic activity whose primary emphasis is not reading.
11	Social Interaction	One or more students and a teacher or aide are interacting about work or subjects other than class-related material. The teacher is the initiator of the interaction.
12	Classroom Management	One or more adults are performing duties related to the classroom but not directly related to any activity which is occurring at the time of the Snapshot. Examples are a teacher correcting papers at his or her desk, setting up materials for the next class, or arranging books on a shelf.
13	Transition: Putting Materials or Books Away, Getting Ready to Leave	Students and adults are putting away materials or books and are getting ready to leave.
14	Waiting	One or more students are waiting for the teacher in order to begin an assignment or take an exam.
15	Students Uninvolved; Arriving/Departing	This category is recorded when one or more students are not involved in any activity or are arriving or departing.
16	Being Disciplined	One or more students are being reprimanded for their behavior or are being sent out of the room for disciplinary reasons.

CLASSROOM SNAPSHOT

TIME STARTED

(hr.)	(min.)

SEQ. NO. 1

ACTIVITY	MATERIAL																	
	01			02			03			04			05			06		
	Textbook			Workbook Worksheet Paper			Test			Same/ Manipulative Materials			Reading Kit			AV Equipment Learning Machine		
	1	2	R No.	1	2	R No.	1	2	R No.	1	2	R No.	1	2	R No.	1	2	R No.
01 Reading Silently																		
02 Reading Aloud																		
03 Making Assignments																		
04 Instruction																		
05 Discussion																		
06 Practice Drill																		
07 Written Assignments																		
08 Evaluation, Feedback																		
09 Taking Test, Quiz																		
10 Nonreading Learning																		
11 Social Interaction																		
12 Classroom Management																		
13 Transition																		
14 Waiting																		
15 Student Uninvolved																		
16 Being Disciplined																		

Column 1 : Number of students in group (1 2 S M L E)
 Column 2 : Identification of adult (T A O I)
 Column R : Reading skills being used (R)
 Column No. : Number of groups

For this Snapshot only:

No. of Adults in room

No. of Students in room

DEFINITIONS FOR FIVE-MINUTE INTERACTION CODES

The R, C, and Ne Codes

Coded R, C, and Ne control bubbles give the computer general instructions about processing interaction frames. Table A-2 presents these codes.

Table A-2

THE R, C, AND Ne CODES

<u>Code</u>	<u>Item</u>	<u>Description</u>
R	Repeat	Code R in an interaction frame indicates that the interaction in the frame above is repeated. If the interaction or activity being observed continues without change, code R is used in the left-hand column for all frames following the initial coding until the activity stops or changes. Only R is entered.
C	Cancel	When a mistake is made in coding an interaction, code C is marked in the left-hand column of the miscoded frame, and the observer then continues coding in the following frame.
Ne	Non-English	If the interaction being observed is carried on in a language other than English, Ne is coded in the left-hand column of each appropriate frame.

The Who Column

The Who column indicates who is doing the talking or performing the action. Table A-3 presents these codes.

Table A-3

CODES FOR THE WHO COLUMN

Code	Item	Code Usage (Description)
T	Teacher	The one person who ultimately is responsible for the everyday conduct of the classroom--also called the focus teacher, for the purposes of SOI.
A	Adult	Any adult in the classroom other than the focus teacher
O	Outside Intruder	Any outside person who enters a classroom and interrupts a teacher with call slips, messages, and the like.
Ps	Primary Student	A student with whom an adult is interacting.
Ds	Different Student	A student who enters into the interaction of the adult and Ps and is noticed briefly by the adult. If the adult switches focus to Ds and Ps leaves, Ds then becomes Ps.
Vs	Volunteer Student	Any child who volunteers a response to a question which has not been directed specifically to him. The question may have been directed to another child or to a whole group of children.
Sm	Small Group	Three to six students interacting with the focus teacher.
M	Medium Group	Seven to sixteen students interacting with the focus teacher.
L	Large Group	Minimum of 17 students and up to the total class minus one interacting with the focus teacher.
E	Everyone	All students present in the classroom (regardless of number) interacting with the focus teacher.

The To Whom Column

The To Whom column indicates the person or group talked to or interacted with or the students' materials used. The codes used in this column are the same as the codes for the Who column and are given in Table A-3.

The What Column

The What column indicates categories of observed actions or behaviors. The What column codes are given in Table A-4.

Table A-4

CODES FOR THE WHAT COLUMN

CODE	ITEM	USAGE
1	Command	Code 1 is recorded for an order or request that asks for a response free of argument. It has one anticipated response that is expected to be carried out verbally or nonverbally. <u>Examples</u> "Jim, please shut the curtains so we can get started." "It is your turn to read, Sue."
1Q	Direct Question	Code 1Q is recorded for a request for direct recall of previously learned material. A yes/no answer or some other type of specific response (such as a statement of facts, itemization, classification, or a definition) or an action is anticipated. <u>Examples</u> "Can you explain what 'ratio' means?" "What is wrong with problem number three?"
2	Request for Open-Ended Information	Code 2 is recorded for a request (in command form) for information that allows the respondent a free express of ideas, feelings, and opinions. <u>Examples</u> "Tell me what you think the author was trying to tell us in this story." "Tell the class which part of the film you found most interesting."

Table A-4 (Continued)

CODE	ITEM	USAGE
3	Response	Code 3 is recorded for compliance (verbal or nonverbal) with a command (Code 1), to a request for information (Code 2), to a question (Codes 1Q, 2Q), to support/acknowledgement (Code 7), to praise (Code 8), or to a correction (Code 9). (Code 3 is not recorded automatically after a question. If a student refuses a request, Code 11 is used. If he or she doesn't respond, Code 10NV is recorded. If a student states that he or she does not know the answer, Code 10 is entered. <u>Examples</u> Student smiles proudly after teacher praises his correct answer. Student or adult answers a question. Student stops combing her hair on request.
4	Instruction	Code 4 is used for students reading aloud to teacher, and for the following focus-adult actions: • Giving information verbally to others; for example, reviewing lessons, giving directions for assignments, and lecturing. • Explaining new school rules. • Demonstrating an activity non-verbally. • Discussing a student's completed assignments. • Explaining rules of behavior for the classroom. • Explaining the schedule to a new student. • Describing the agenda for the class period to the class. <u>Examples</u> Teacher says to class, "Today we are going to review your test on <u>Fahrenheit 451</u>."

Table A-4 (Continued)

CODE	ITEM	USAGE
4	Instruction (continued)	<u>Examples (continued)</u> Teacher says to class, "Remember that a semicolon must separate two independent clauses." Teacher says to class, "The principal says that students may not loiter around the student lounge after the bell rings."
5	Social Remarks	Code 5 is used for greetings, personal compliments, remarks that are social or not related to a task. For Code 5 actions not accompanied by talking, 5NV is recorded. <u>Examples</u> Teacher says to student, "You got your hair cut--I hardly recognize you." Student says to teacher, "I'm getting a new stereo for my birthday." In a reading class teacher says to student, "I saw you playing football yesterday."
6	Activity-Related Comments or Actions	Code 6 is used for the activity or problem at hand, or related statements, in which students, adults, or both, are involved. <u>Examples</u> Teacher has been lecturing and student comments. The teacher is passing out students' papers. Student comments on the section of the story that he or she just read. Teacher is setting up materials for students' use.

Table A-4 (Continued)

CODE	ITEM	USAGE
7	Support/Acknowledge*	Code 7 is used for statements that are supportive or show recognition, for example, an indication that a response, product, or behavior is recognized or agreed with, or for repeating another individual's statement immediately, as a form of acknowledgment. <u>Examples</u> Teacher repeats a student's answer as an acknowledgment. Teacher says to student, "That's a difficult word, but try to sound it out."
8	Praise	Code 8 is used for verbal or nonverbal approval or praise directed to responses, products, or behaviors. <u>Examples</u> Teacher says to class, "The results of your tests are superb. I'm very pleased!" After class settles down as a result of teacher's request, he or she says, "That's better. Thank you."
9	Correction	Code 9 is recorded for attempts by the teacher to inform student(s) that a response is not correct or that behavior is unacceptable. <u>Examples</u> Teacher asks student to stop combing her hair. Student has responded incorrectly to the teacher's request to spell a word. Teacher says, "No, that's not right."

* Warm and encouraging support is coded TS7P.

Table A-4 (Continued)

CODE	ITEM	USAGE
10	No Response/Don't Know	Code 10 is used for verbal or nonverbal (for instance, shoulder shrugging) indications that an individual does not know the answer to a question. If the respondent says nothing and does not acknowledge the question, 10NV is coded.
		<u>Examples</u> The teacher has asked the student a question to which the student replies, "I don't understand." Student does not respond when asked to pass out the books. Student is talking and does not respond to teacher's request to be quiet.
11	Refuse/Reject	Code 11 is used for very clear verbal or nonverbal refusals. For very clear verbal or nonverbal rejections, 11N is recorded.
		<u>Examples</u> An adult refuses a student's request for more time on a quiz. A teacher asks a student to come up to the blackboard and explain a math problem, and the student says, "I won't do it." Student puts his or her books away even though the teacher has asked the student to read silently until the end of class. An adult rejects a student's demand for attention.
12	Observing/Listening	Code 12 is used for an adult who is listening to others. For an adult who is observing others, 12NV is recorded. All modifiers coded in the How column with code 12 refer to the person(s) in the To Whom column. B is not entered with 12.
		<u>Examples</u> Teacher listens to a student read.

Table A-4 (Continued)

CODE	ITEM	USAGE
12	Observing/Listening (continued)	<u>Examples</u> (continued) Teacher observes class reading silently. Teacher is watching a student walk back to his seat.
NV	Nonverbal	When the action being coded is not accompanied by words, NV is entered in the What column together with the other relevant What code. <u>Example</u> Teacher nods to student's answer.
X	Movement	Code X is used when the Who of the interaction moves from one location to another. X can be recorded with any What code. <u>Examples</u> As the teacher is instructing, he or she is walking back and forth in the front of the classroom. A student walks over to the teacher while asking about the meaning of a word.
T	Touch	Whenever the focus person touches the individual with whom he or she is interacting, T is used along with the other relevant What code. <u>Example</u> Teacher touches the shoulder of a student as he or she asks a question.
CF	Corrective Feedback	The corrective feedback code is used any time an adult is attempting to modify a student's behavior or academic response. A teacher may use various methods, and the appropriate What code will indicate which method was used. <u>Examples</u> (on following page)

Table A-4 (Concluded)

CODE	ITEM	USAGE
CF	Corrective Feedback (Continued)	<u>Examples</u> The teacher has asked a student from which Shakespeare play "West Side Story" was derived. The student answers, "MacBeth." The teacher says: (1) "No, that's not right." (2) "Are you sure that 'Macbeth' is the right answer?" (3) "No, the play I'm thinking of is a story of two young people who are in love but their families are enemies." (4) "No, the right answer is 'Romeo and Juliet.'"

The How Column

The How column gives information about the action, describing its content of effect. Table A-5 details the codes for the How column.

Table A-5

CODES FOR THE HOW COLUMN

CODE	ITEM	USAGE
Ta	Task	Ta is coded for an interaction (other than one based on reading) that is related to the subject matter of instruction. The subject matter of instruction is defined on the SOI cover page, in the Subject Identifier section. The Task code may be recorded with any What code except 5, which, by definition, is for a comment not related to a task.
		<u>Examples</u> In math class teacher asks student, "How is a decimal number converted to a percentage number?" In geography class teacher asks student, "Can you name all the continents for me?" In history class teacher asks students, "What was the name of the third president of the United States?"
R	Reading	Code R is used for interactions concerned with reading, including spelling, vocabulary, grammar, oral reading, reading comprehension, creative writing, writing construction, and related subjects. If reading is being taught in a "content area" (such as in oral reading of a social studies text), the Reading and Task codes both are marked. If reading is being taught in a reading class, only the Reading code is marked.
		<u>Examples</u> Teacher tells student, "You read that paragraph very well, Jim." Teacher tells student, "I know that's a difficult word but try to sound it out." Teacher asks student, "Who was the main character in the story?"

Table A-5 (Continued)

CODE	ITEM	USAGE
B	Behavior	B is entered for interactions related to classroom behavior (deportment), for example, correction of a student's unacceptable behavior or praise of acceptable behavior. When a teacher is explaining rules of conduct, code B is used with code 4 in the What section.
		<u>Examples</u> Teacher says to group, "Everyone please be quiet so we can hear Janie read." Teacher says to student, "Mary, if you don't stop talking I'll have to ask you to leave the class." Teacher says to class, "I want to thank all of you for being so courteous to our visitor yesterday."
L	Laughter	Code L is used only when there are obvious expressions of happiness, such as laughing or giggling, or when teacher or student(s) with whom the focus teacher is interacting verbally express(es), directly or indirectly, eagerness and interest in the activity.
		<u>Examples</u> Student is laughing at teacher's comment. Teacher displays a great deal of enthusiasm by laughing about a particular part of a story.
N	Negative	The N code is used for any sarcastic or demeaning statements by the teacher, and for overt displays of anger by the teacher.
		<u>Examples</u> Student has answered incorrectly, and teacher says, "What a stupid answer!"

Table A-5 (Continued)

CODE	ITEM	USAGE
N	Negative (continued)	<u>Examples</u> (continued) Teacher displays a great deal of hostility and anger because students are not paying attention.
W	Warmth, Support	W is entered when interactions occur that express support or encouragement for another person in the classroom. This code will be used mainly with the 7 code in the What section when the student is having difficulty with the classroom work and the teacher encourages the student to persevere. <u>Examples</u> Student has responded to teacher's question by stating that she doesn't know the answer. Teacher says, "Think about it for a moment, I know you can answer that." Student is having difficulty sounding out a word. Teacher says, "I know it's difficult, but try it again."
D	Disciplinary Departure	D is used when a teacher sends a student from the room for disciplinary reasons. <u>Example</u> Teacher says, "I will not argue any longer--go to the vice-principal's office."
Hu	Humor	The Hu code is used only when it is obvious that an individual is attempting to elicit laughter from those with whom he or she is interacting. Although it can be difficult to perceive this interact in an individual who has a very "dry" sense of humor, the observer should not be worried about this difficulty. N is recorded with Hu when the humor is overtly sarcastic, especially at the cost of student(s). <u>Examples</u> (on following page)

Table A-5 (Continued)

CODE	ITEM	USAGE
Hu	Humor (continued)	<u>Examples</u> Student tells a joke to the teacher or to another student. A student mispronounces a vocabulary word, and another student comments, "Yeah, Dave's real smart."
G	Guide	The G code is used only with the 4 in the What section. The 4G code is a particular type of corrective feedback: the teacher is guiding the student to a correct answer by giving more information but not the answer to the question itself. <u>Example</u> The teacher has asked a student the meaning of "subtropic." The student has responded that she doesn't know the answer. The teacher then says, "Remember yesterday we talked about prefixes and how they influence the meaning of a word. We talked about sub and that it meant under or below. Think how 'sub' could influence the meaning of the word "subtropic."
I	Idea, Opinion	This code has two uses. Code I is entered when the teacher offers students the opportunity to state their preferences for specific materials or groupings or for the activities in which they wish to be involved or the sequence of those activities. When the I code is used in this way, it is used also with the O, or Organizing, code (the next code on this table). Code I is used also when students respond or initiate a statement that demonstrates a synthesis of previously acquired knowledge. A 2 or 2Q input would encourage this type of response but it might also occur after a 1Q question if the student

Table A-5 (Continued)

CODE	ITEM	USAGE
I	Idea, Opinion (continued)	elaborated beyond the information initially requested.
		<u>Examples</u> Teacher asks the group, "Class, would you prefer doing your spelling list before or after viewing the film?" Teacher tells student, "You may choose any of the books on the back bookcase to read during the last 15 minutes of the class." The teacher has asked a student to spell the word "perceive." Student responds "I know that it's spelled p-e-r-c-e-i-v-e because the rule is that <u>i</u> comes after <u>e</u> except after <u>c</u>, and perceive has a <u>c</u>."
O	Organizing	The O code is used for interactions in which the teacher explains the procedures of the class and the academic work that is expected from the students, for example, when the teacher assigns work, makes explicit the organization of materials or the sequence of subject matter to be taught and the way in which it will be taught, or announces the time allowed for an activity.
		<u>Example</u> "I want you to review your spelling test, list the words you missed in your folder, and put both the test and your folder on my desk."
U	Utilitarian	U is recorded when the focus teacher requests that students prepare to begin or end an activity, or directs them as they do this. For example, U is entered for passing out or correcting materials, arranging seating patterns, or setting up or dismantling necessary equipment. The

Table A-5 (Continued)

CODE	ITEM	USAGE
U	Utilitarian (continued)	code is used also for any responses to utilitarian directions. U is not recorded if academic instruction is occurring. <u>Examples</u> Teacher is telling students to clear their desks. Teacher is giving students work-sheets.
F1	Foul Language	F1 is used when socially unacceptable words are used in interactions. For the purpose of this study, "damn," "hell," "bitch," "bastard," and words that are similarly and more offensive are considered foul language. <u>Example</u> Teacher asks why student isn't doing the work. Student replies, "Because I don't give a damn about it."
Pu	Punish	The Pu code is used when, as punishment, the teacher withdraws privileges or assigns extra work, and when the student(s) respond to these punitive actions. <u>Examples</u> Teacher tells student, "You must do an additional assignment because of your behavior." Teacher says to student, "You may not take part in the class play."
S	Sad	S is coded when a student obviously displays feelings of hurt or humiliation. These expressions may be obvious and accompanied by at least one of the actions listed as examples. <u>Examples</u> (on following page)

Table A-5 (Concluded)

CODE	ITEM	USAGE
S	Sad (continued)	<u>Examples</u> Student covers face with an object or hands. Student puts head down on desk. Student verbalizes that he or she feels hurt or humiliated. Student leaves room.

Appendix B
TEST INSTRUMENTS

Appendix B

TEST INSTRUMENTS

Four test instruments were used during the Basic Skills study: (1) the first 36 items of the Classroom Environment Scale, Form R, (2) the Student Rating Scale of Instructors, (3) the FIRO-B, and (4) the Teacher Questionnaire. The four instruments are reproduced in this appendix.

CLASSROOM ENVIRONMENT SCALE FORM R

EDISON J. TRICKETT & RUDOLF H. MOOS

INSTRUCTIONS

There are 90 statements in this booklet. They are statements about high school and junior high school classrooms. You are to decide which of these statements are true of your classroom and which are false.

Make all your marks on the separate answer sheet. If you think a statement is true or mostly true of your class, make an X in the box labeled T (true). If you think the statement is false, or mostly false, make an X in the box labeled F (false).

Do not make any marks on this booklet.



CONSULTING PSYCHOLOGISTS PRESS, INC.
577 College Ave., Palo Alto, California 94306

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1. Students put a lot of energy into what they do here.
2. Students in this class get to know each other really well.
3. This teacher spends very little time just talking with students.
4. Almost all class time is spent on the lesson for the day.
5. Students don't feel pressured to compete here.
6. This is a well-organized class.
7. There is a clear set of rules for students to follow.
8. There are very few rules to follow.
9. New ideas are always being tried out here.
10. Students daydream a lot in this class.
11. Students in this class aren't very interested in getting to know other students.
12. The teacher takes a personal interest in students.
13. Students are expected to stick to classwork in this class.
14. Students try hard to get the best grade.
15. Students are almost always quiet in this class.
16. Rules in this class seem to change a lot.
17. If a student breaks a rule in this class, he's sure to get in trouble.
18. What students do in class is very different on different days.
19. Students are often "clock-watching" in this class.
20. A lot of friendships have been made in this class.
21. The teacher is more like a friend than an authority.
22. We often spend more time discussing outside student activities than class-related material.
23. Some students always try to see who can answer questions first.
24. Students fool around a lot in this class.
25. The teacher explains what will happen if a student breaks a rule.
26. The teacher is not very strict.
27. New and different ways of teaching are not tried very often in this class.
28. Most students in this class really pay attention to what the teacher is saying.
29. It's easy to get a group together for a project.
30. The teacher goes out of his way to help students.
31. Getting a certain amount of classwork done is very important in this class.
32. Students don't compete with each other here.
33. This class is often in an uproar.
34. The teacher explains what the rules are.
35. Students can get in trouble with the teacher for talking when they're not supposed to.
36. The teacher likes students to try unusual projects.

STUDENT RATING SCALE OF INSTRUCTORS

DIRECTIONS: Use the pencil provided. Select the rating number that best describes the person or course. Circle the numbered response on this questionnaire. Make no other marks on this form.

A	<u>Objectives and Goals of Course</u>	1 Fails to explain the course objectives	2 Somewhere between 1 & 3	3 Makes class goals clear	4 Somewhere between 3 & 5	5 Is very clear in relating course work to objectives
B	<u>Clearness of assignments</u>	1 Directions and assignments are unclear	2 Somewhere between 1 & 3	3 Directions and assignments are sometimes clear	4 Somewhere between 3 & 5	5 Directions and assignments are always clear
C	<u>Importance of assignments</u>	1 Assignments are meaningless busy-work	2 Somewhere between 1 & 3	3 Assignments are sometimes necessary work	4 Somewhere between 3 & 5	5 Assignments are always necessary work
D	<u>Fairness of grading</u>	1 Grading is unfair	2 Somewhere between 1 & 3	3 Sometimes fair in grading	4 Somewhere between 3 & 5	5 Grading is fair
E	<u>Classroom control in discipline</u>	1 Lacks classroom control; seldom handles discipline well	2 Somewhere between 1 & 3	3 Has fair classroom control; sometimes handles discipline well	4 Somewhere between 3 & 5	5 Has good classroom control; always handles discipline well
F	<u>Preparation for class</u>	1 Never is well prepared for class	2 Somewhere between 1 & 3	3 Sometimes prepared for class	4 Somewhere between 3 & 5	5 Always is well prepared for class
G	<u>Manner of speaking with students</u>	1 I find it hard to talk with this teacher	2 Somewhere between 1 & 3	3 I can sometimes talk with this teacher	4 Somewhere between 3 & 5	5 I find it easy to talk with this teacher
H	<u>Ability to Listen</u>	1 Never listens to what I have to say	2 Somewhere between 1 & 3	3 Usually listens to what I have to say	4 Somewhere between 3 & 5	5 Carefully listens and responds to me
I	<u>Student Enjoyment of Class</u>	1 Never enjoys the class	2 Somewhere between 1 & 3	3 Sometimes enjoys the class	4 Somewhere between 3 & 5	5 Always enjoys the class

J	<u>Benefit of course</u>	1 I have learned nothing from this course	2 Somewhere between 1 & 3	3 I have learned an average amount in this course	4 Somewhere between 3 & 5	5 I have learned a great deal in this course
K	<u>Effort to help students</u>	1 Teacher makes no effort to help me do well in this class	2 Somewhere between 1 & 3	3 Teacher makes some effort to help me do well in this class	4 Somewhere between 3 & 5	5 Teacher always makes an effort to help me do well in this class
L	<u>Interest in students</u>	1 Not interested in me as an individual	2 Somewhere between 1 & 3	3 Somewhat interested in me as an individual	4 Somewhere between 3 & 5	5 Interested in me as an individual
M	<u>Presentation of material</u>	1 Explains the lesson in a confusing manner	2 Somewhere between 1 & 3	3 Explains the lesson clearly	4 Somewhere between 3 & 5	5 Explains even difficult ideas well
N	<u>Participation</u>	1 Never encourages students to question or participate	2 Somewhere between 1 & 3	3 Sometimes encourages students to question or participate	4 Somewhere between 3 & 5	5 Always encourages students to question or participate
O	<u>Stimulation of thought</u>	1 Never encourages students to think	2 Somewhere between 1 & 3	3 Sometimes encourages students to think	4 Somewhere between 3 & 5	5 Always encourages students to think
P	<u>I have been able to get help from this teacher outside of class</u>	1 Yes	2 No	3 Have not tried to get help		
Q	<u>What is your sex?</u>	1 Female	2 Male			
R	<u>What is your ethnic origin</u>	1 Spanish surname	2 White	3 Black	4 Asian	5 Polynesian, Filipino American Indian
S	<u>What is your present grade level?</u>	1 Six	2 Seven	3 Eight		
		4 Freshman	5 Sopomora	6 Junior	7 Senior	
T	<u>What is your birthdate?</u>	month	day	year		

B-7

FIRO-B

1977 Edition

WILL SCHULTZ, F.D.

DIRECTIONS: This transformation explores the typical ways you interact with people. There are no right or wrong answers.

Sometimes people are confused by answer questions like these in terms of what they think a person should do. This is not what is wanted here. We would like to know how you actually behave.

Some items may seem similar to others. However, each item is different so please answer each one without regard to the others. There is no time limit, but do not debate long over any item.

Name _____

Address _____

For each statement below, decide which of the following answers best applies to you. Place the number of the answer in the box at the left of the statement. Please be as honest as you can.

1. never 2. rarely 3. occasionally 4. sometimes 5. often 6. usually

- | | |
|---|---|
| ☐ 1. I try to be with people. | ☐ 9. I try to include other people in my plans. |
| ☐ 2. I let other people decide what to do. | ☐ 10. I let other people control my actions. |
| ☐ 3. I join social groups. | ☐ 11. I try to have people around me. |
| ☐ 4. I try to have close relationships with people. | ☐ 12. I try to get close and personal with people. |
| ☐ 5. I tend to join social organizations when I have an opportunity. | ☐ 13. When people are doing things together I tend to join them. |
| ☐ 6. I let other people strongly influence my actions. | ☐ 14. I am easily led by people. |
| ☐ 7. I try to be included in informal social activities. | ☐ 15. I try to avoid being alone. |
| ☐ 8. I try to have close, personal relationships with people. | ☐ 16. I try to participate in group activities. |

For each of the next group of statements, choose one of the following answers:

1. nobody 2. one or two people 3. a few people 4. some people 5. many people 6. most people

- | | |
|--|---|
| ☐ 17. I try to be friendly to people. | ☐ 23. I try to get close and personal with people. |
| ☐ 18. I let other people decide what to do. | ☐ 24. I let other people control my actions. |
| ☐ 19. My personal relations with people are cool and distant. | ☐ 25. I act cool and distant with people. |
| ☐ 20. I let other people take charge of things. | ☐ 26. I am easily led by people. |
| ☐ 21. I try to have close relationships with people. | ☐ 27. I try to have close, personal relationships with people. |
| ☐ 22. I let other people strongly influence my actions. | |

For each of the next group of statements, choose one of the following answers:

1. nobody 2. one or two people 3. a few people 4. some people 5. many people 6. most people

- | | |
|--|---|
| ☐ 28. I like people to invite me to things. | ☐ 35. I like people to act cool and distant toward me. |
| ☐ 29. I like people to act close and personal with me. | ☐ 36. I try to have other people do things the way I want them done. |
| ☐ 30. I try to influence strongly other people's actions. | ☐ 37. I like people to ask me to participate in their discussions. |
| ☐ 31. I like people to invite me to join in their activities. | ☐ 38. I like people to act friendly toward me. |
| ☐ 32. I like people to act close toward me. | ☐ 39. I like people to invite me to participate in their activities. |
| ☐ 33. I try to take charge of things when I am with people. | ☐ 40. I like people to act distant toward me. |
| ☐ 34. I like people to include me in their activities. | |

For each of the next group of statements, choose one of the following answers:

1. never 2. rarely 3. occasionally 4. sometimes 5. often 6. usually

- | | |
|---|---|
| ☐ 41. I try to be the dominant person when I am with people. | ☐ 48. I like people to include me in their activities. |
| ☐ 42. I like people to invite me to things. | ☐ 49. I like people to act close and personal with me. |
| ☐ 43. I like people to act close toward me. | ☐ 50. I try to take charge of things when I'm with people. |
| ☐ 44. I try to have other people do things I want done. | ☐ 51. I like people to invite me to participate in their activities. |
| ☐ 45. I like people to invite me to join their activities. | ☐ 52. I like people to act distant toward me. |
| ☐ 46. I like people to act cool and distant toward me. | ☐ 53. I try to have other people do things the way I want them done. |
| ☐ 47. I try to influence strongly other people's actions. | ☐ 54. I take charge of things when I'm with people. |



STANFORD RESEARCH INSTITUTE
Menlo Park, California 94025 U S A

STUDY OF BASIC SKILLS INSTRUCTION
IN JUNIOR AND SENIOR HIGH SCHOOLS

TEACHER QUESTIONNAIRE

SPRING 1977

Your Name _____

Your School and District _____

Today's Date _____

B-11

TEACHER QUESTIONNAIRE

A. Educational Opinion Inventory

Put a check mark in the response column which best describes your feelings about each statement.

	5	4	3	2	1
	Strongly agree	Agree	Undecided or uncertain	Disagree	Strongly disagree
1. Careful planning on the part of the teacher will produce an unusual sense of purpose in the pupils.					
2. A teacher should make almost all the decisions about what pupils are to learn and how they are to learn it.					
3. At the undergraduate level, the education of the future teacher should be an education in the liberal arts and sciences.					
4. Pupils can learn mathematics as well as any other subject.					
5. Whether or not pupils are happy in the classroom is much less important than whether or not they are learning what they should be learning.					
6. Pupils ought to be given a great deal of initiative in deciding what they are to learn and how they are to learn it.					
7. The best way to teach writing emphasizes having the pupils learn the parts (such as sentences and paragraphs) separately and then coordinate these parts into the whole.					
8. Learning the processes involved in identifying problems that are worth tackling should be considered a paramount goal for both teachers and learners.					
9. Homogenous grouping of pupils by class (such as advanced classes, slow classes, etc.) is the most practical solution to the tremendous range of abilities found in pupils.					
10. Typically, texts or courses of study should only be thought of as helps, not requirements, in teaching a subject.					
11. Good teaching and general affection for pupils are two separate things that have little if anything to do with each other.					
12. A teacher should attempt to keep pupils' attention by being interesting rather than by asking for attention outright.					

B. Teacher Characteristics Schedule

1. Which of the following would you prefer to do?
 - a. Supervise an intramural sports event or other after school activity
 - b. Select and arrange books for the school library
 - c. Design costumes for a school play
2. Which of the following responses first comes to your mind when you see the word INTRACTABLE?
 - a. Suspicious
 - b. Unruly
 - c. Wicked
 - d. Never heard of the word
3. Which of the following responses first comes to your mind when you see the word PLACATE?
 - a. Chemical
 - b. Sign
 - c. Appease
 - d. Scold
 - e. Never heard of the word
4. Which of the following responses first comes to your mind when you see the word LIMPID?
 - a. Transparent
 - b. Sea animal
 - c. Lamé
 - d. Never heard of the word
5. Which of the following responses first comes to your mind when you see the word PHLEGMATIC?
 - a. Happy
 - b. Spasmodic
 - c. Sluggish
 - d. Never heard of the word
6. When you think of the future, which of the following seems most attractive to you?
 - a. Owning a home of my own
 - b. Rearing my children
 - c. Spending a year in travel
 - d. Learning an avocation
 - e. Getting ahead in my profession

7. Which of the following would you prefer to do on a day when you didn't have to work?
- Take a group of girls or boys on a hike
 - Take a few fellow-teachers someplace you found interesting
 - Play tennis or golf with a friend
 - Try to repair a broken piece of furniture, a broken radio set, etc.
8. Which of the following do you consider to be the least important characteristic of a teacher?
- A severe and aloof manner
 - Inadequate mastery of the subject
 - Inability to maintain a systematic and orderly approach to the work
9. Which of the following best applies to you?
- As a child I was very sensitive
 - As a child I was happy-go-lucky
10. If you were equally capable at each, which of the following would you prefer to do?
- Tell folk tales to students
 - Write or draw illustrations for stories or books
 - Invent new games for teenagers
11. Which of the following responses first comes to your mind when you see the word ODIIOUS?
- Bad humored
 - Ill-smelling
 - Detestable
 - Never heard of the word
12. Which of the following best applies to you?
- I am suspicious of people who are over-friendly
 - I am suspicious of people who are aloof
13. Which of the following would you rather do?
- Write short stories for teenagers
 - Write letters to newspaper editors about educational problems
 - Write well-organized outlines and notes to guide your instruction

14. Which of the following responses first comes to your mind when you see the word ORISON?

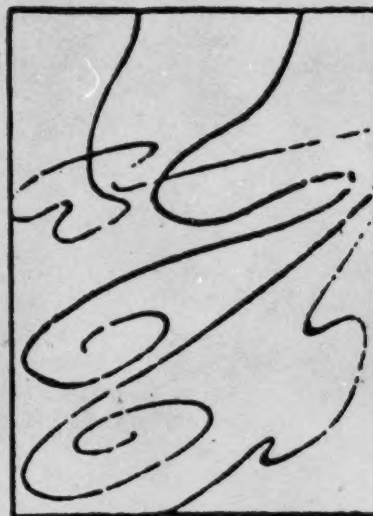
- a. Song
- b. Constellation
- c. Prayer
- d. Never heard of the word

15. Which drawing, A or B, do you like more?

- a. Drawing A
- b. Drawing B



A



B

16. Check any of the following factors that you think contributed toward your choice of teaching as a career.

(Mark as many responses as apply to you from items 16 and 17)

- 16a. Favorable prospect of professional advancement
- 16b. Desire for a satisfying position in the community
- 16c. Desire to help people
- 16d. Opportunity for public service
- 16e. Desire for intellectual growth

- 17a. Interest in books
- 17b. Interest in social problems
- 17c. Interest in community activities

18. In general, how would you describe the educational/cultural condition of your family and home when you were a child?

- a. No interest or concern about educational/cultural matters; few books, little reading or cultural discussion
- b. Relatively little time devoted to educational or cultural interests or concern; minimum attention to "books", learning, etc.
- c. About average for the times; some books, occasional discussion of cultural affairs, some interest in education
- d. Above average with regard to available books, discussion of intellectual and cultural affairs, interest in education
- e. Great interest, concern with, and participation in cultural and educational matters; "books", learning, etc., considered very important

19. Which of the following did you do as a child or adolescent?

(Mark as many responses as apply to you.)

- a. Cared for younger children in own family or for children outside immediate family
- b. Played school
- c. Read stories to children
- d. Took charge of a class when the teacher was absent
- e. Did none of the above

20. Which of the following did you do during the past year?

(Mark as many responses as apply to you.)

- a. Belonged to a book purchasing club
- b. Read book reviews in the newspapers or magazines at least once a month
- c. Attended a lecture to hear some author
- d. Attended meetings of a writer's or literary club or study group
- e. Wrote an essay, story, poem, play

21. Check any of the following activities in which you have spent an average of three hours or more per week during the past three weeks (or the most recent three-week period when such activities were in season).

(Mark as many responses as apply to you from items 21 and 22.)

- 21a. Gardening
- 21b. Indoor games (cards, chess, etc.)
- 21c. Indoor exercise (hand ball, gymnastics, etc.)
- 21d. Painting, sculpture, etc.
- 21e. Attending concerts, exhibits, etc.
- 22a. Reading (recreational)
- 22b. Attending movies, attending theater, attending theatricals, debating, etc.
- 22c. Hobbies
- 22d. Home workshop activity
- 22e. Social dancing

23. Indicate which of the following organizations you have belonged to or now belong to.

(Mark as many responses as apply to you.)

- a. High school or college sorority or fraternity
- b. Hobby club
- c. Honor society (scholastic, scientific or professional)
- d. Debating society or club
- e. Community social organization (bridge, country club, etc.)

24. Check the kind (or kinds) of books you frequently read during leisure time.

(Mark as many responses as apply to you.)

- a. Travel and adventure
- b. Biography
- c. Fiction
- d. Humor
- e. Collections of poems, essays, short stories, etc.

25. Which of the following did you do during the past year?

(Mark as many responses as apply to you.)

- a. Read science news in newspapers or magazines at least once a month
- b. Attend a lecture or listened to talk on the radio, or TV about science
- c. Visited a science museum or exhibition of scientific inventions

26. Which of the following responses first comes to your mind when you seen the word SACROSANCT?

- a. Sacrificial
- b. Dormant
- c. Inviolable
- d. Gullible
- e. Never heard of the word

27. Which of the following did you do during the past year?

(Mark as many responses as apply to you.)

- a. Gave music lessons
- b. Listened to symphony programs on radio at least once a month
- c. Attended one or more musical concerts
- d. Played a musical instrument

28. Which of the following did you do during the past year?

(Mark as many responses as apply to you.)

- a. Read motion picture or theater reviews in the newspapers or magazines at least once a month
- b. Listened to serious drama and plays on radio or television in the evening regularly
- c. Attended one or more plays or drama--either professional or amateur
- d. Took part in some dramatic production

29. "Good teaching requires the teacher to employ ways to stimulate and motivate students."

- a. Strongly Disagree
- b. Tend to Disagree
- c. Tend to Agree
- d. Strongly Agree

30. Which of the following responses first comes to your mind when you see the word HIATUS?

- a. Animal
- b. Gap
- c. Calamity
- d. Never heard of the word

31. The appreciation of music and art is more important to me than knowing about new discoveries in medicine.

- a. Strongly Disagree
- b. Tend to Disagree
- c. Tend to Agree
- d. Strongly Agree

32. I enjoy music, good literature, and art more than keeping informed about current events.

- a. Strongly Disagree
- b. Tend to Disagree
- c. Tend to Agree
- d. Strongly Agree

33. Which of the following responses first comes to your mind when you see the word HARBINGER?

- a. Forerunner
- b. Well-tailored
- c. Fortuneteller
- d. Never heard of the word

34. A student should be taught to understand and appreciate beauty in music and art.
- a. Strongly Disagree
 - b. Tend to Disagree
 - c. Tend to Agree
 - d. Strongly Agree
35. I enjoy participation in physical activities more than reading and studying.
- a. Strongly Disagree
 - b. Tend to Disagree
 - c. Tend to Agree
 - d. Strongly Agree
36. Which of the following responses first comes to your mind when you see the word VACILLATION?
- a. Purification
 - b. Wavering
 - c. Foolishness
 - d. Never heard of the word
37. I like activities that provide opportunity to compete with others.
- a. Strongly Disagree
 - b. Tend to Disagree
 - c. Tend to Agree
 - d. Strongly Agree

C. Self-Evaluation Questionnaire

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then put a check mark to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	Almost always	Often	Sometimes	Almost never
1. I feel pleasant -----				
2. I tire quickly -----				
3. I wish I could be as happy as others seem to be -----				
4. I am losing out on things because I can't make up my mind soon enough -----				
5. I feel rested -----				
6. I am "calm, cool and collected" -----				
7. I feel that difficulties are piling up so that I cannot overcome them -----				
8. I worry too much over something that really doesn't matter -----				
9. I am happy -----				
10. I am inclined to take things hard -----				
11. I feel secure -----				
12. I try to avoid facing a crisis or difficulty -----				
13. I feel blue -----				
14. I am content -----				
15. Some unimportant thought runs through my mind and bothers me -----				
16. I take disappointments so keenly that I can't put them out of mind -----				
17. I am a steady person -----				
18. I get in a state of tension or turmoil as I think over my recent concerns and interests -----				

D. Teaching Practices

Please respond to the following statements by indicating how often you perform each of the activities indicated in your regular, everyday teaching.

1. When students are working by themselves, I leave them alone rather than check up on them.
2. I select materials for my students as things develop, rather than beforehand.
3. I stay in my seat rather than monitor student work by walking around and checking, when they are working by themselves.
4. I give a lot of time to such activities as giving students directions and organizing the class for instruction.
5. I avoid using visual demonstrations and phonics exercises during reading lessons for even a few minutes out of each hour.
6. I avoid using the blackboard or some other type of equipment to present information visually.
7. I avoid having students associate the sounds of new words with the letters of the words.
8. I allow students to leave their seats without getting permission to tend to such personal needs as sharpening pencils, getting workbooks, and performing other instruction-related activities.
9. When working with a small group of students (8 or fewer), I leave the other students alone to work on their assigned tasks.
10. When working with a small group of students (8 or fewer), I have the small group face me with their backs to the rest of the class.
11. I allow a student misbehavior to continue until it comes to an end by itself.
12. I overreact to the misbehavior of a student if the "overreaction" stops the misbehavior.
13. I always try to maintain discipline, even if this requires disciplining a student who was not directly involved in the misbehavior.
14. I move around the room a lot while students are working at their seats.

Never	Rarely	Occasionally	Often	Very frequently

32. If I call on a student who is prone to respond only seldom or never, and the student does not answer, answers incorrectly, or says "I don't know" in response to my question, I rephrase the question, give clues, or ask a new question of the student rather than simply repeat the original question.
33. If my students do not compete for opportunities to respond, I allow another student to call out an answer on his own initiative when the student to whom the question was directed does not answer, answers incorrectly, or confesses ignorance.
34. During private conferences with students, I give a lot of brief feedback concerning the student's work.
35. During private conferences with students who need more explanations, I use about as much long feedback (more than a short sentence or phrase of 3 or 4 words) as brief feedback.
36. During reading-group instruction, I keep my feedback brief.
37. During reading-group instruction, I conduct fast paced drill-type activities.
38. During a discussion on an academic topic, I avoid giving long feedback to pupil-initiated questions or comments.

Never	Rarely	Occasionally	Often	Very frequently

E. Classroom Description

Question

(1) Classrooms differ in many ways depending upon the philosophy and goals of the teaching staff, needs of children, etc. Each statement in Column A is matched with a contrasting statement in Column B. For each pair, place an X inside the parentheses which comes closest to describing your own classroom.

Column A	Almost always like A	↔	Somewhat like A and somewhat like B	↔	Almost always like B	Column B
a. Students work independently	(1)	(2)	(3)	(4)	(5)	Students work under adult supervision
b. Teacher imparts information and provides demonstrations	(1)	(2)	(3)	(4)	(5)	Students gather information on their own
c. Adults initiate interactions with students	(1)	(2)	(3)	(4)	(5)	Students initiate interactions with adults
d. Emphasis on emotional needs	(1)	(2)	(3)	(4)	(5)	Emphasis on subject matter
e. Undesired behavior is corrected	(1)	(2)	(3)	(4)	(5)	Undesired behavior is ignored
f. Various activities take place at the same time	(1)	(2)	(3)	(4)	(5)	All the class is engaged in the same activity
g. Lesson plan is followed closely	(1)	(2)	(3)	(4)	(5)	Lesson plan is flexible

Column A	Almost always like A ↔ Somewhat like A and somewhat like B ↔ Almost always like B					Column B
	Almost always like A		Somewhat like A and somewhat like B		Almost always like B	
h. Work and play are distinguished	(1)	(2)	(3)	(4)	(5)	Work and play are not distinguished
i. Students choose their own activities and materials	(1)	(2)	(3)	(4)	(5)	Teaching staff determines activities and materials
j. Individual needs dominant	(1)	(2)	(3)	(4)	(5)	Group needs dominant
k. Students interact freely with each other	(1)	(2)	(3)	(4)	(5)	Students do not interact freely with each other
l. Praise and approval given for specific accomplishments	(1)	(2)	(3)	(4)	(5)	Praise and approval given without regard to specific accomplishments
m. Students change places freely	(1)	(2)	(3)	(4)	(5)	Students have assigned seats

F. Motivational Techniques

How often do you use each of the following methods to motivate your students?
Please check the appropriate columns.

	<u>Never</u>	<u>Rarely</u>	<u>Occasionally</u>	<u>Often</u>	<u>Regularly</u>
1. Praise	_____	_____	_____	_____	_____
2. Public recognition	_____	_____	_____	_____	_____
3. Exemption from tests	_____	_____	_____	_____	_____
4. Special privileges	_____	_____	_____	_____	_____
5. Contests, competitive games	_____	_____	_____	_____	_____
6. Notes to parents	_____	_____	_____	_____	_____
7. Written comments on papers	_____	_____	_____	_____	_____
8. Individual prizes, rewards	_____	_____	_____	_____	_____
9. Support or encouragement	_____	_____	_____	_____	_____
10. Share pleasure in student's achievement	_____	_____	_____	_____	_____

G. Teacher Concerns Checklist

WHEN YOU THINK ABOUT YOUR TEACHING, WHAT ARE YOU CONCERNED ABOUT?

I am concerned about:	Not con- cerned at all	Slight- ly con- cerned	Moder- ately con- cerned	Very con- cerned	Ex- tremely con- cerned
1. lack of respect of some students	_____	_____	_____	_____	_____
2. standards and regulations set for teachers	_____	_____	_____	_____	_____
3. selecting and teaching content well	_____	_____	_____	_____	_____
4. the mandated curriculum is not appropriate for all students	_____	_____	_____	_____	_____
5. whether students are learning what they should	_____	_____	_____	_____	_____
6. whether the students really like me or not	_____	_____	_____	_____	_____
7. increasing students' feelings of accomplishment	_____	_____	_____	_____	_____
8. the nature and quality of instructional materials	_____	_____	_____	_____	_____
9. where I stand as a teacher	_____	_____	_____	_____	_____
10. motivating students to study	_____	_____	_____	_____	_____
11. working productively with other teachers	_____	_____	_____	_____	_____
12. lack of instructional materials	_____	_____	_____	_____	_____

I am concerned about:	Not con- cerned at all	Slight- ly con- cerned	Moder- ately con- cerned	Very con- cerned	Ex- tremely con- cerned
13. rapid rate of curriculum and instructional change	_____	_____	_____	_____	_____
14. feeling under pressure too much of the time	_____	_____	_____	_____	_____
15. frustrated by the routine and inflexibility of the situation	_____	_____	_____	_____	_____
16. becoming too personally involved with students	_____	_____	_____	_____	_____
17. maintaining the appropriate degree of class control	_____	_____	_____	_____	_____
18. acceptance as a friend by students	_____	_____	_____	_____	_____
19. understanding the principal's policies	_____	_____	_____	_____	_____
20. the wide range of student achievement	_____	_____	_____	_____	_____
21. doing well when a supervisor is present	_____	_____	_____	_____	_____
22. meeting the needs of different kinds of students	_____	_____	_____	_____	_____
23. being fair and impartial	_____	_____	_____	_____	_____
24. diagnosing student learning problems	_____	_____	_____	_____	_____
25. getting a favorable evaluation of my teaching	_____	_____	_____	_____	_____
26. being asked personal questions by my students	_____	_____	_____	_____	_____

I am concerned about:	Not con- cerned at all	Slight- ly con- cerned	Moder- ately con- cerned	Very con- cerned	Ex- tremely con- cerned
27. too many non-instructional duties	_____	_____	_____	_____	_____
28. insuring that students grasp subject matter fundamentals	_____	_____	_____	_____	_____
29. working with too many students each day	_____	_____	_____	_____	_____
30. challenging unmotivated students	_____	_____	_____	_____	_____
31. the values and attitudes of the current generation	_____	_____	_____	_____	_____
32. adapting myself to the needs of different students	_____	_____	_____	_____	_____
33. whether students can apply what they learn	_____	_____	_____	_____	_____
34. understanding the philosophy of the school	_____	_____	_____	_____	_____
35. students who disrupt classes	_____	_____	_____	_____	_____
36. instilling worthwhile concepts and values	_____	_____	_____	_____	_____
37. how students feel about me	_____	_____	_____	_____	_____
38. student health and nutrition problems that affect learning	_____	_____	_____	_____	_____
39. the psychological climate of the school	_____	_____	_____	_____	_____

I am concerned about:	Not con- cerned at all	Slight- ly con- cerned	Moder- ately con- cerned	Very con- cerned	Ex- tremely con- cerned
40. clarifying the limits of my authority and responsibility	_____	_____	_____	_____	_____
41. assessing and reporting student progress	_____	_____	_____	_____	_____
42. chronic absence and dropping out of students	_____	_____	_____	_____	_____
43. lack of academic freedom	_____	_____	_____	_____	_____
44. teaching required content to students	_____	_____	_____	_____	_____
45. student use of drugs	_____	_____	_____	_____	_____
46. feeling more adequate as a teacher	_____	_____	_____	_____	_____
47. guiding students toward intellectual and emotional growth	_____	_____	_____	_____	_____
48. being accepted and respected by professional persons	_____	_____	_____	_____	_____
49. adequately presenting all of the required material	_____	_____	_____	_____	_____
50. slow progress of certain students	_____	_____	_____	_____	_____
51. my ability to present ideas to the class	_____	_____	_____	_____	_____
52. helping students to value learning	_____	_____	_____	_____	_____
53. whether each student is getting what he needs	_____	_____	_____	_____	_____

I am concerned about:	Not con- cerned at all	Slight- ly con- cerned	Moder- ately con- cerned	Very con- cerned	Ex- tremely con- cerned
54. increasing my proficiency in content	_____	_____	_____	_____	_____
55. recognizing the social and emotional needs of students	_____	_____	_____	_____	_____
56. the wide diversity of student ethnic and socioeconomic backgrounds	_____	_____	_____	_____	_____

H. Teacher Self-Description

- | | | | |
|---|---|-----|---|
| T | F | 1. | I often wish people would be more definite about things. |
| T | F | 2. | It is annoying to listen to a lecturer who cannot seem to make up his mind as to what he really believes. |
| T | F | 3. | I find that a well-ordered mode of life with regular hours is congenial to my temperament. |
| T | F | 4. | It is hard for me to sympathize with someone who is always doubting and unsure about things. |
| T | F | 5. | I often start things I never finish. |
| T | F | 6. | Our thinking would be a lot better off if we would just forget about words like "probably", "approximately", and "perhaps". |
| T | F | 7. | I never make judgments about people until I am sure of the facts. |
| T | F | 8. | A strong person will be able to make up his mind even on the most difficult questions. |
| T | F | 9. | For most questions there is just one right answer, once a person is able to get all the facts. |
| T | F | 10. | I like to have a place for everything and everything in its place. |
| T | F | 11. | I don't like to work on a problem unless there is the possibility of coming out with a clear-cut and unambiguous answer. |
| T | F | 12. | It bothers me when something unexpected interrupts my daily routine. |
| T | F | 13. | Most of the arguments or quarrels I get into are over matters of principle. |
| T | F | 14. | I am known as a hard and steady worker. |
| T | F | 15. | I don't like things to be uncertain and unpredictable. |
| T | F | 16. | Once I have my mind made up I seldom change it. |
| T | F | 17. | I think I am stricter about right and wrong than most people. |
| T | F | 18. | I am in favor of a very strict enforcement of all laws, no matter what the consequences. |

- T F 19. I always see to it that my work is carefully planned and organized.
- T F 20. The trouble with many people is that they don't take things seriously enough.
- T F 21. I set a high standard for myself and I feel others should do the same.
- T F 22. People who seem unsure and uncertain about things make me feel uncomfortable.

Biographical Information Sheet

Total number of years teaching experience: _____

Number of years teaching experience at

Primary (Grades 1-3) _____

Elementary (Grades 4-6) _____

7th Grade _____

8th Grade _____

9th Grade _____

10th Grade _____

11th Grade _____

12th Grade _____

Other grade levels (please
specify grade and number of years)

Education: College or University attended

Degree

Years attended

Sex: M F

Marital status: _____

Age: _____

Appendix C

OBSERVER RELIABILITY AND INTERRATER AGREEMENT

Appendix C

OBSERVER RELIABILITY AND INTERRATER AGREEMENT

Training Reliability

Procedures

Prior to the training session, SRI trainers reviewed the library of videotapes filmed in secondary classrooms. Specific tapes were selected which were to be shown to observers to determine their competency in the use of the observation system. The basis for the selection of these tapes was:

- (1) The clarity of the tapes, both visual and auditory.
- (2) The variety of behaviors occurring and subsequently the variety of codes required for correct coding of the tapes.

To ensure that all observers would be coding the exact same event, a copy of the camera original was made with freeze frames recorded at those behaviors which were to be coded by the observers. The criterion coding was established from these tapes. Even after this laborious process, it was decided that some of the freeze frames were not clear and these were eliminated from the criterion.

On Day 6 of the 7-day training session, the observers were shown the criterion coded videotapes. They had not seen the tapes previously and no discussion of the tapes was allowed during their viewing and coding. Nine different sequences were shown. Each sequence was first shown at normal speed which the observers were told to watch and not to code. The same sequence, with freeze frames, was shown again. Observers were told to code the behavior occurring at each of the freeze frames.

After all sequences were viewed and coded, the observers were allowed to leave the training room, and the trainer evaluated each observer's coding against the criterion. The trainer calculated the percent correct for each code by individual observer. Any percentages

less than 70 were noted. The following morning, the trainer reviewed the observers' coding with them. Any cases where observers coded less than 70% correct on a specific code were discussed. Videotapes were shown which contained examples of the codes in question. When necessary, the observers were asked to code these tapes and demonstrate, to the trainer's satisfaction, their ability to use the code correctly. All nine observers were allowed to collect data for the present study.

Results

Table C-1 identifies the percent correct for each code by individual observer. These figures reflect the observers' coding of the criterion videotapes on Day 6. The last two columns of the table contain the mean frequency and percentage across all nine observers. The Who and To Whom codes have not been listed individually because the accuracy rate for these codes is extremely high.

Table C-1 reveals that when viewing the criterion tapes, three observers did not distinguish between the 1Q (direct question) and 2Q (open-ended question) codes. This confusion was due to the wording of the questions asked on the tapes. A direct question (1Q) which was eliciting a definite answer but which was prefaced with a phrase such as "What do you think" presented difficulty for these three observers. These types of questions often occurred within the context of a discussion focusing on reading comprehension. The continued training clarified this confusion for the observers.

One observer did not reach 70% reliability on the 4 (Instruction, Student Reading Aloud) code. The correct procedure is for the observer to use the coding which indicates a student reading aloud; this observer coded the teacher listening to a student. This was explained to the observer, who then recorded the tape and demonstrated an understanding of the correct procedure.

One observer failed to code a 5 (Social Comment) code which occurred on the criterion tape. The example was a social comment in question form which the observer coded as a question (1Q).

Table C-1

ACCURACY RATE FOR EACH CODE BY INDIVIDUAL OBSERVER

Code	Criterion Coding	01		02		03		04		05		06		07		08		09		$\bar{X}$	
		Correct		Correct		Correct		Correct		Correct		Correct		Correct		Correct		Correct		Correct	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
WHO (All)	151	150	99	146	97	147	97	151	100	144	95	147	97	140	93	151	100	151	100	147	97
TO WHOM (All)	151	151	100	145	96	148	98	149	99	133	88	150	99	134	89	145	96	151	100	145	96
1	9	9	100	7	78	9	100	9	100	7	78	8	89	8	89	6	67	9	100	8	89
1Q	28	24	86	27	96	26	93	28	100	17	61	24	86	18	64	24	86	28	100	24	86
2Q	5	2	40	5	100	5	100	2	40	3	60	4	80	3	60	4	80	5	100	3.7	74
3	33	32	97	31	94	31	94	34	100	29	88	33	100	31	94	29	88	32	97	31.3	95
4	29	28	97	22	76	27	93	27	93	25	86	27	93	19	66	25	86	29	100	25.4	88
5	2	1	50	2	100	2	100	2	100	2	100	2	100	2	100	2	100	2	100	1.9	95
6	9	7	78	7	78	5	56	9	100	4	44	8	89	7	78	9	100	8	89	7.1	79
7	12	12	100	7	58	7	58	11	92	6	50	11	92	9	75	9	75	12	100	9.3	78
8	8	5	63	5	63	6	75	8	100	7	88	7	88	6	75	7	88	8	100	6.6	83
9	11	10	91	5	46	9	82	8	73	6	55	11	100	9	82	8	73	6	55	8	73
10	2	2	100	2	100	2	100	2	100	2	100	2	100	1	50	2	100	2	100	1.9	95
11	3	1	33	2	67	1	33	1	33	3	100	1	33	2	67	2	67	3	100	1.8	60
NV	9	7	78	7	78	9	100	6	67	9	100	10	100	8	89	9	100	10	100	8.3	92
X	5	1	20	0	0	3	60	5	100	5	100	5	100	5	100	5	100	4	80	3.7	74
T	3	2	67	0	0	0	0	2	67	2	67	1	33	2	67	2	67	2	67	1.4	47
Cf	22	15	68	22	100	17	77	22	100	22	100	17	77	20	91	9	41	22	100	19.1	87
Ta	21	13	62	11	52	11	52	20	95	21	100	14	67	17	81	10	49	9	43	14	67
R	101	97	96	96	95	101	100	101	100	88	87	101	100	93	92	95	94	98	97	96.7	96
B	15	13	87	11	73	10	67	11	73	9	60	10	67	11	73	10	67	10	67	11.7	78
L	8	1	125	4	50	2	25	3	38	6	75	5	63	2	25	0	0	8	100	3.4	43
Fl	1	1	100	1	100	1	100	1	100	1	100	1	100	1	100	1	100	1	100	1	100
N	4	2	50	4	100	3	75	3	75	4	100	3	75	3	75	3	75	3	75	3.1	78
W	4	1	25	2	50	2	50	3	75	2	50	3	75	3	75	0	0	1	25	2.3	58
Dp	1	1	100	1	100	1	100	1	100	0	0	0	0	0	0	0	0	1	100	.6	60
O	8	8	100	8	100	6	75	4	50	6	75	4	50	4	50	5	63	8	100	5.9	74
U	5	4	80	5	100	2	40	4	80	1	20	2	40	3	60	5	100	4	80	3.3	66
I	6	5	83	2	33	4	67	4	67	3	50	6	100	0	0	5	83	4	67	3.7	62
Pu	1	1	100	1	100	1	100	1	100	1	100	0	0	1	100	1	100	1	100	.9	90
	8			7	88	6	75	6	75	6	75	4	50	5	63	5	63	6	75		

The low reliability on the 6 (Task-Related Comment) and the 11 (Refusal) codes are related. A student-initiated negative comment is coded as a 6N (Negative); however, a student negative response to a teacher's command or request is coded using the 11 code. Also, the low frequency of this code on the criterion tape makes interpretation of the reliability of the code quite difficult.

Movement, Nonverbal and Touch are less obvious behaviors. These codes are seen, not heard. Observers often require more prompting to record these behaviors since we first stress the verbal behaviors in training. For all observers Touch had the lowest reliability; but it only occurred three times.

Several observers had difficulty coding the How codes and have a low percentage correct. Previous training sessions have indicated that a low percentage correct on these codes is a result of observers failing to see the behavior when it occurs on the tape and not a confusion in the correct use of the codes. The use of these codes is infrequent and the behavior nonverbal, so the observer must be looking at the tape at the moment the behavior occurs and not looking down at the coding booklet. Observation and coding of this How behavior are easier in the classroom setting.

The last column of Table C-1 shows the percent correct across all observers. For the What codes, only code 11 is less than 70%. As mentioned before, the low frequency of this code makes interpretation difficult. However, any analysis using this code must be performed with caution. Caution must also be taken when analyzing data involving the T (Touch), Ta (Task), L (Laughter), W (Warmth), Dp (Disciplinary Departure), U (Utilitarian), and the I (Idea, Opinion) codes. Some of these codes may be combined in the analysis, e.g., laughter and warmth could combine to form a positive affect variable.

Interrater Reliability

Procedures

During the second week of data collection, the SRI trainer visited the six sites and conducted simultaneous observations with each of the nine observers who were collecting data for the study. This was done to determine the interrater reliability approximately 2 weeks after the training session had ended. All of these observations were conducted within a 6-day period. In most cases, the observer and trainer were in the classroom for the entire class period. However, in two incidents (Observers 03 and 08) this was not possible because of unforeseen events, such as early dismissal of the class.

Results

Table C-2 reveals the proportional frequency of codes used during the interrater reliability check. The proportional frequency is computed on the basis of the number of times a specific code is recorded over the total number of frames. The total number of frames recorded during any reliability observation ranges from 112 to 356. As mentioned before, in two cases the observer and trainer were not able to observe for the entire class period. This difference in the number of frames is adjusted since the total number of frames is the denominator in computing the proportional frequency.

Those cases in which there is a greater than 5% discrepancy have been investigated and decisions made as to the causes of the discrepancy. The observation booklets were reviewed and it was found that the causes for error fall into three general categories:

- A need for more consistent coding procedures of the R (Repeat) code.
- Lack of understanding among observers of need to code complete interactions.
- A need for more precise definitions for the use of the code (for example, how Task differs from Reading).

One of the primary causes for discrepancies between the observer and the trainer is the coding procedure which allows observers to circle

Table C-2

PROPORTION OF INDIVIDUAL CODES ON INTERRATER RELIABILITY OBSERVATIONS

<u>Total Frames</u>	<u>Obsv. 02 (297)</u>	<u>Trainer (268)</u>	<u>Obsv. 03 (136)</u>	<u>Trainer (115)</u>	<u>Obsv. 04 (204)</u>	<u>Trainer (206)</u>	<u>Obsv. 05 (349)</u>	<u>Trainer (342)</u>	<u>Obsv. 06 (356)</u>	<u>Trainer (316)</u>	<u>Obsv. 07 (204)</u>	<u>Trainer (196)</u>	<u>Obsv. 08 (112)</u>	<u>Trainer (106)</u>	<u>Obsv. 09 (295)</u>	<u>Trainer (262)</u>
<u>Code</u>																
<u>Who</u>																
T	.74	.76	.69	.68	.41	.32	.54	.52	.80	.80	.65	.65	.80	.81	.67	.71
A	-	-	-	-	-	-	-	-	.003	.006	-	-	-	-	.003	-
O	-	-	-	-	-	-	-	-	.003	-	-	-	-	-	.003	.004
Ps	.08	.07	.20	.20	.50	.62	.35	.37	.09	.08	.17	.23	.05	.06	.21	.15
Ds	.16	.12	.01	.01	.03	.02	.08	.07	.08	.08	.08	.02	.14	.11	.11	.12
Vs	.01	.01	.06	.03	.001	.01	-	-	-	-	.02	.02	-	-	.003	-
Sm	-	-	.02	-	.03	-	.01	.01	-	-	.07	.05	-	-	-	-
M	.003	.01	-	-	.005	-	.01	.01	-	-	-	-	-	-	-	-
L	-	-	-	-	-	-	-	.01	-	-	-	-	-	-	-	-
E	.003	.03	-	.08	.02	.02	.01	.002	-	-	.01	.03	-	.01	-	-
<u>To Whom</u>																
T	.31	.34	.31	.32	.59	.68	.54	.58	.54	.49	.28	.36	.19	.19	.41	.38
A	-	.003	-	-	-	-	-	-	.01	.02	-	-	-	-	.007	-
O	-	-	-	-	-	-	-	-	.003	-	-	-	-	-	.007	.004
Ps	.23	.14	.08	.06	.18	.12	.13	.15	.20	.20	.11	.17	.19	.12	.24	.23
Ds	.11	.13	.08	.09	.08	.07	.06	.06	.07	.02	.17	.17	.05	.04	.10	.12
Vs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sm	.01	.04	-	-	-	-	.005	.002	-	.006	.22	.09	-	-	-	-
M	.003	-	-	-	-	-	.05	.15	-	-	-	-	-	-	-	-
L	-	-	-	-	-	-	-	.14	-	-	-	-	-	-	-	-
E	.34	.35	.53	.52	.15	.12	.21	.002	.17	.26	.20	.16	.55	.64	-	-

Table C-2 (continued)

PROPORTION OF INDIVIDUAL CODES ON INTERRATER RELIABILITY OBSERVATIONS

<u>Total Frames</u>	<u>Obsv. 02 (297)</u>	<u>Trainer (268)</u>	<u>Obsv. 03 (136)</u>	<u>Trainer (115)</u>	<u>Obsv. 04 (204)</u>	<u>Trainer (206)</u>	<u>Obsv. 05 (349)</u>	<u>Trainer (342)</u>	<u>Obsv. 06 (356)</u>	<u>Trainer (316)</u>	<u>Obsv. 07 (204)</u>	<u>Trainer (196)</u>	<u>Obsv. 08 (112)</u>	<u>Trainer (106)</u>	<u>Obsv. 09 (295)</u>	<u>Trainer (262)</u>
<u>Code</u>																
<u>What</u>																
1	.07	.02	.03	.03	.08	.05	.04	.09	.03	.05	.07	.09	.09	.06	.05	.05
1Q	.19	.12	.15	.20	.11	.06	.06	.05	.11	.08	.26	.22	.07	.07	.19	.15
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2Q	.01	.03	-	-	.01	.01	-	-	-	-	-	-	.01	.01	-	-
3	.17	.15	.10	.14	.15	.14	.13	.13	.12	.11	.21	.25	.16	.16	.20	.19
4	.25	.32	.58	.51	.44	.59	.36	.32	.06	.15	.27	.20	.38	.27	.03	.03
5	.03	.01	-	-	-	-	.002	-	.01	.01	-	.005	-	.01	.03	.02
6	.24	.23	.02	.01	.06	.03	.03	.05	.40	.38	.01	.08	.04	.02	.21	.23
7	.01	.02	.02	.06	.09	.09	.008	.06	.08	.02	.01	.08	.02	.02	.02	.02
8	-	.01	-	.01	.02	.02	.04	-	-	-	.01	.02	-	-	-	-
9	.06	.02	.02	.02	.02	.01	.03	.02	.01	-	.01	.01	.09	.17	.01	.01
10	-	.02	.007	.007	.02	-	.005	.01	-	.01	.01	.03	.02	-	.03	.01
11	-	-	-	-	-	-	.01	.01	-	-	-	-	-	-	.02	-
12	.01	.04	-	-	-	-	.28	.25	.16	.15	.03	.01	.13	.20	.21	.26
NV	.18	.18	.02	.04	.06	.02	.32	.29	.69	.52	.04	.07	.27	.38	.18	.15
X	.11	.06	-	-	-	-	.01	.01	.05	.09	.02	.01	.09	.07	.03	.03
T	-	-	-	-	-	-	.002	.002	-	-	-	-	-	-	-	-
CE	.04	.03	.19	.19	.14	.10	.04	.04	.06	.09	.09	.14	-	-	.004	.006
<u>How</u>																
Ta	.36	.82	-	-	-	-	-	-	-	-	.01	.01	.78	.72	.03	.06

Table C-2 (concluded)

PROPORTION OF INDIVIDUAL CODES ON INTERRATER RELIABILITY OBSERVATIONS

	Obsv. 02	Trainer	Obsv. 03	Trainer	Obsv. 04	Trainer	Obsv. 05	Trainer	Obsv. 06	Trainer	Obsv. 07	Trainer	Obsv. 08	Trainer	Obsv. 09	Trainer
<u>Total Frames</u>	<u>(297)</u>	<u>(268)</u>	<u>(136)</u>	<u>(115)</u>	<u>(204)</u>	<u>(206)</u>	<u>(349)</u>	<u>(342)</u>	<u>(356)</u>	<u>(316)</u>	<u>(204)</u>	<u>(195)</u>	<u>(112)</u>	<u>(106)</u>	<u>(295)</u>	<u>(262)</u>
<u>Code</u>																
<u>How (cont.)</u>																
R	.53	.38	.91	.95	.97	.98	.97	.97	.96	.95	.91	.91	.02	-	.72	.70
B	.04	.03	.02	.02	-	-	.02	.02	.006	-	-	.01	.14	.23	-	.01
L	.02	.05	-	-	.02	.01	.04	.01	.04	.04	.01	.01	-	.01	.05	.06
N	.02	.02	-	-	-	-	.61	.01	-	-	-	-	-	-	.01	.01
W	-	.02	-	.01	.03	.02	.003	-	-	.003	-	-	-	-	.02	.02
Dp	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hu	-	-	-	-	.02	.02	-	.01	-	-	-	-	-	-	-	-
G	-	-	.08	.08	-	-	.01	.005	.008	-	-	.005	-	-	-	-
I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O	.08	.14	.07	.09	-	.03	.04	.07	.01	.02	.02	.02	.10	.10	.01	.03
U	-	.07	-	-	-	-	.03	.03	.02	.05	.02	.03	-	-	.003	.007
F1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

C-10

an R (for repeat) which is used at those times when the same action is continued and the same code applies as that recorded in the preceding frame. R is a type of abbreviated coding. Only one entry is made rather than the entire Who, To Whom, What, and How frame. To guarantee consistent use of the R code, observers were trained to circle this R at a 5-second interval. However, it appears difficult for some observers to adhere to this 5-second time interval. When interactions are occurring, observers are generally coding the entire frame--Who, To Whom, What, and How--at an extremely rapid pace. When the classroom environment changes to a slower, noninteraction pace (for example, teacher lecturing, student reading aloud), the observer must change his/her pace and enter only the R code every 5 seconds. This difficulty in changing pace is reflected in the discrepancies between the number of R codes used by the observer and those used by the trainer. (It may be more efficient to have the observer code the total frame and eliminate the R code.)

The discrepancies in What codes shown between Observer 07 and the SRI trainer are attributed to lack of understanding on the part of the observer that all interaction sequences should be recorded. This observer's low proportion of Codes 6 and 7 reveals that these complete sequences were not being recorded.

The large discrepancy between Observer 02 and the trainer on the use of the Task and Reading codes can be attributed to the incomplete specifications for use of these codes. The codes are meant to indicate whether nonreading tasks (Ta) or reading (R) instruction is occurring. In the classroom observed, reading instruction was occurring within the content area of English. The teacher was conducting a poetry writing class and it was difficult to assess when actual reading instruction was occurring. This type of discrepancy must be corrected by modifying the use of the Reading code to include all reading activities..

The interrater reliability on low frequency codes is very encouraging and this low frequency must be taken into account when assessing the agreement between observers. The absence of codes should also be considered as a reliability factor. One could say the trainer and observer are perfectly reliable on these codes since they both agree these codes did not occur.

Appendix D

RAW STANDARD SCORE CONVERSION TABLES

ERRATA

COMPREHENSIVE TESTS OF BASIC SKILLS, FORM S
TECHNICAL BULLETIN NO. 1, ALL LEVELS

Computer programming errors unfortunately resulted in errors in the data that appear in certain of the tables in the *Technical Bulletin No. 1, Comprehensive Tests of Basic Skills, Form S*. This errata sheet contains corrected data for these tables in the forms described below.

- Table 16: This table is reprinted in its entirety with correct data.
- Table 64: The bottom part of this table (Page 53 in the Bulletin) is reproduced in truncated form to show one correction for Item No. 25.
- Table 65: The bottom part of this table (Page 54 in the Bulletin) is reproduced in truncated form to show one correction for Item No. 17.
- Table 67: The second page of this table (Page 58 in the Bulletin) is reproduced in truncated form to show three corrections for Item No. 46, three corrections for Item No. 47, four corrections for Item No. 48, one correction for Item No. 49, and one correction for Item No. 50.
- Table 68: The second page of this table (Page 60 in the Bulletin) is reproduced in truncated form to show one correction for Item No. 46, one correction for Item No. 47, and one correction for Item No. 48.
- Table 69:
The first page of this table (Page 61 in the Bulletin) is reproduced in truncated form to show seven corrections for Item No. 21.
The second page of this table (Page 62 in the Bulletin) is reproduced in truncated form to show one correction for Item No. 1.

These tables will appear in corrected form when *Technical Bulletin No. 1* is reprinted.

COEFFICIENTS AND CONSTANTS FOR CONVERTING SCALE SCORES

Table 16

FORM S TO FORM Q

	Reading Vocabulary	Reading Comprehension	Total Reading	Spelling	Language Mechanics	Language Expression	Total Language	Math Computation	Math Concepts	Math Applications	Total Math	Total Battery	Reference Study
Grade 2	828 64 000	987 2 000	1 815 66 000	1 045 81 000	828 21 000	1 127 87 200	849 10 200	817 80 000	816 81 000	801 74 200	823 58 400	781 54 000	813 66 000
Grade 3	829 63 000	988 19 200	1 817 82 200	1 046 79 400	829 43 100	1 085 29 100	882 13 100	882 53 000	838 80 200	848 82 200	886 60 200	727 58 000	813 66 000
Grade 4	828 73 200	988 25 100	1 817 98 300	1 045 36 700	828 9 000	1 084 34 800	881 11 200	881 42 000	838 74 500	848 82 200	886 60 200	782 58 000	813 66 000
Grade 5	828 74 000	988 42 000	1 817 116 000	1 045 16 000	828 17 000	1 084 34 800	881 11 200	881 42 000	838 74 500	848 82 200	886 60 200	782 58 000	813 66 000
Grade 6	828 88 000	988 60 000	1 817 148 000	1 045 75 000	828 12 000	1 084 34 800	881 11 200	881 42 000	838 74 500	848 82 200	886 60 200	782 58 000	813 66 000
Grade 7	828 10 000	988 58 000	1 817 68 000	1 045 37 000	828 41 200	1 084 34 800	881 11 200	881 42 000	838 74 500	848 82 200	886 60 200	782 58 000	813 66 000
Grade 8	828 80 000	988 123 700	1 817 203 700	1 045 72 000	828 89 000	1 084 34 800	881 11 200	881 42 000	838 74 500	848 82 200	886 60 200	782 58 000	813 66 000
Grade 9	828 84 000	988 126 700	1 817 210 700	1 045 72 000	828 89 000	1 084 34 800	881 11 200	881 42 000	838 74 500	848 82 200	886 60 200	782 58 000	813 66 000
Grade 10	828 72 000	988 110 700	1 817 182 700	1 045 68 000	828 103 200	1 084 34 800	881 11 200	881 42 000	838 74 500	848 82 200	886 60 200	782 58 000	813 66 000



COEFFICIENTS AND CONSTANTS FOR CONVERTING SCALE SCORES

Table 16
FORM S TO FORM J

	Reading Vocabulary	Reading Comprehension	Total Reading	Spelling	Language Mechanics	Language Expression	Total Language	Math Computation	Math Concepts	Math Applications	Total Math	Total Battery	Reference Skills
Grade 2	m .825 b 93.600	m .987 b 3.600	m .930 b 23.900	m 1.040 b 81.000	m .930 b 21.600	m 1.137 b 87.200	m .949 b 16.200	m .817 b 59.800	m .816 b 61.600	m .901 b 74.200	m .823 b 56.400	m 781 b 64.000	
Grade 3	m .829 b 93.600	m .984 b 19.300	m .986 b 48.900	m 1.066 b 70.400	m .999 b 40.900	m 1.003 b 29.100	m .883 b 13.100	m .862 b 53.900	m .830 b 60.200	m .948 b 62.300	m .903 b 60.700	m 727 b 96.600	
Grade 4	m .938 b 73.300	m .939 b 29.100	m .987 b 53.600	m 1.035 b 29.700	m .960 b 5.600	m 1.034 b 34.800	m .921 b 11.200	m .891 b 43.600	m .829 b 74.500	m .964 b 58.900	m .894 b 77.400	m 762 b 93.500	m 943 b 95.000
Grade 5	m .830 b 74.400	m .990 b 42.500	m .990 b 66.200	m 1.027 b 18.900	m .997 b 17.400	m .993 b 3.400	m .952 b 13.600	m .873 b 51.300	m .798 b 88.400	m .906 b 37.900	m .812 b 81.600	m 764 b 2.600	m 836 b 70.000
Grade 6	m .980 b 92.000	m .949 b 69.900	m .934 b 78.200	m 1.012 b 6.900	m .990 b 12.300	m .960 b 23.900	m .969 b 17.500	m .884 b 58.900	m .900 b 96.200	m .928 b 51.600	m .815 b 96.000	m 761 b 11.600	m 781 b 2.700
Grade 7	m .894 b 92.600	m .916 b 66.600	m .939 b 76.900	m .938 b 37.800	m .949 b 41.300	m .903 b 53.400	m .922 b 54.400	m .879 b 96.300	m .823 b 99.200	m .873 b 90.900	m .823 b 87.100	m 793 b 2.700	m 765 b 23.200
Grade 8	m .986 b 93.000	m .769 b 23.700	m .868 b 72.600	m .931 b 81.900	m .973 b 96.900	m .982 b 67.700	m .921 b 63.900	m .908 b 90.600	m .828 b 96.600	m .835 b 92.800	m .828 b 90.400	m 808 b 3.000	m 710 b 55.600
Grade 9	m .821 b 94.600	m .772 b 26.700	m .986 b 70.200	m .922 b 99.000	m .962 b 4.700	m .879 b 70.800	m .923 b 63.300	m .923 b 51.900	m .846 b 92.900	m .815 b 6.100	m .921 b 43.900	m 834 b 93.900	m 743 b 36.900
Grade 10	m .833 b 72.800	m .794 b 16.700	m .890 b 54.000	m .990 b 48.400	m .871 b 3.200	m .982 b 62.900	m .926 b 96.200	m .991 b 12.300	m .912 b 43.600	m .802 b 16.900	m .999 b 5.500	m 983 b 55.200	m 763 b 17.900

Table 17
FORM Q TO FORM S

	Reading Vocabulary	Reading Comprehension	Total Reading	Spelling	Language Mechanics	Language Expression	Total Language	Math Computation	Math Concepts	Math Applications	Total Math	Total Battery	Reference Skills
Grade 2	m 1.212 b 75.300	m 1.013 b 3.600	m 1.075 b 26.700	m .986 b 98.300	m 1.067 b 23.700	m .980 b 76.700	m 1.177 b 19.600	m 1.224 b 73.200	m 1.225 b 73.900	m 1.248 b 92.600	m 1.215 b 68.600	m 1.280 b 81.900	
Grade 3	m 1.296 b 76.800	m 1.089 b 20.900	m 1.166 b 96.300	m .939 b 96.100	m 1.001 b 40.900	m .997 b 29.100	m 1.133 b 14.800	m 1.174 b 42.800	m 1.204 b 72.500	m 1.180 b 73.900	m 1.246 b 86.900	m 1.275 b 132.800	
Grade 4	m 1.211 b 68.800	m 1.076 b 31.200	m 1.163 b 51.900	m .966 b 24.400	m 1.042 b 5.800	m 0.967 b 23.600	m 1.074 b 12.000	m 1.122 b 47.700	m 1.296 b 89.000	m 1.167 b 48.000	m 1.244 b 96.300	m 1.312 b 122.900	m 1.187 b 77.100
Grade 5	m 1.264 b 66.000	m 1.116 b 47.700	m 1.163 b 70.000	m .974 b 16.100	m 1.003 b 17.900	m 1.007 b 9.400	m 1.086 b 14.200	m 1.148 b 58.700	m 1.253 b 110.800	m 1.104 b 41.400	m 1.231 b 100.700	m 1.310 b 135.600	m 1.198 b 84.900
Grade 6	m 1.281 b 116.100	m 1.191 b 60.100	m 1.199 b 90.200	m .966 b 6.600	m 1.010 b 12.300	m 1.063 b 25.000	m 1.632 b 18.900	m 1.168 b 48.200	m 1.290 b 112.800	m 1.136 b 58.100	m 1.228 b 105.600	m 1.313 b 146.600	m 1.281 b 132.900
Grade 7	m 1.244 b 116.100	m 1.235 b 119.200	m 1.191 b 94.800	m 1.066 b 40.300	m 1.094 b 43.800	m 1.102 b 59.100	m 1.096 b 89.000	m 1.186 b 76.300	m 1.218 b 108.400	m 1.145 b 69.300	m 1.216 b 105.600	m 1.290 b 129.400	m 1.308 b 161.100
Grade 8	m 1.240 b 114.900	m 1.200 b 190.900	m 1.196 b 94.600	m 1.074 b 55.900	m 1.145 b 102.500	m 1.133 b 76.700	m 1.088 b 49.300	m 1.104 b 46.900	m 1.208 b 126.300	m 1.198 b 111.200	m 1.207 b 107.900	m 1.240 b 127.700	m 1.409 b 219.100
Grade 9	m 1.219 b 103.200	m 1.295 b 184.000	m 1.154 b 81.100	m 1.084 b 44.000	m 1.160 b 121.400	m 1.128 b 90.600	m 1.084 b 89.600	m 1.083 b 56.100	m 1.182 b 109.300	m 1.227 b 130.200	m 1.088 b 47.600	m 1.199 b 112.600	m 1.348 b 184.000
Grade 10	m 1.218 b 99.400	m 1.250 b 129.400	m 1.123 b 60.600	m 1.053 b 47.800	m 1.147 b 118.400	m 1.133 b 71.200	m 1.080 b 63.900	m 1.009 b 12.400	m 1.096 b 47.800	m 1.247 b 145.900	m 1.001 b 0.500	m 1.120 b 61.800	m 1.312 b 154.700
Grade 11													
Grade 12													

Appendix E
OBSERVATION VARIABLES

CLASSROOM SNAPSHOT VARIABLES

Var. No.	Variable Name	Mean	S.D.	Range
TAM1	Teacher with students reading silently from textbook	.22	1.41	0.00-- 9.23
TAM2	Teacher with students reading silently from workbooks, worksheet	.44	2.08	0.00--11.64
TAM5	Teacher with students reading silently from reading kit	.46	3.00	0.00--19.64
TAM8	Teacher reading silently with noncurricular leisure reading	.57	2.25	0.00--11.94
TAM9	Teacher reading silently with no material	--	--	--
TBM1	Student reading aloud with teacher from textbook	4.16	8.82	0.00--30.77
TBM2	Student reading aloud with teacher from workbook, worksheet, paper	3.20	7.32	0.00--30.60
TBM5	Teacher reading aloud with reading kit	.10	.64	0.00-- 4.18
TBM6	Teacher reading aloud with audiovisual equipment, learning machine	.15	.98	0.00-- 6.42
TCM1	Teacher making assignments with textbook	.46	1.68	0.00-- 6.67
TCM2	Teacher making assignments with workbook, work- sheet, paper	1.50	3.60	0.00--13.99
TCM3	Teacher making assignments with test	.17	1.08	0.00-- 7.10
TCM4	Teacher making assignments with game/manipulative materials	.28	1.30	0.00-- 6.76
TCM5	Teacher making assignments with reading kit	.19	1.22	0.00-- 8.00
TCM6	Teacher making assignments with audiovisual equipment, learning machine	--	--	--
TCM7	Teacher making assignments with overhead chalkboard	.18	1.06	0.00-- 6.92
TCM8	Teacher making assignments with noncurricular leisure reading	--	--	--
TCM9	Teacher making assignments with no material	1.23	3.01	0.00--11.77

CLASSROOM SNAPSHOT VARIABLES (continued)

Var. No.	Variable Name	Mean	S.D.	Range
TDM1	Teacher instructing using textbook	1.93	4.56	0.00--22.33
TDM2	Teacher instructing using workbook, worksheet, paper	5.40	6.06	0.00--17.65
TDM3	Teacher instructing for a test	.33	1.54	0.00-- 8.20
TDM4	Teacher instructing with game/manipulative materials	.34	2.13	0.00--13.95
TDM5	Teacher instructing with reading kit	.82	4.73	0.00--31.00
TDM6	Teacher instructing with audiovisual equipment, learning machine	2.96	8.81	0.00--39.53
TDM7	Teacher instructing with chalkboard	2.05	4.89	0.00--20.10
TDM8	Teacher instructing with noncurricular leisure reading	.02	.12	0.00-- .78
TDM9	Teacher instructing with no material	2.51	7.37	0.00--46.04
TEM1	Teacher having discussion, using textbook	2.28	8.62	0.00--45.68
TEM2	Teacher having discussion, using workbook, worksheet, paper	.94	2.81	0.00--14.74
TEM3	Teacher having discussion about a test	--	--	--
TEM4	Teacher having discussion, using game/manipulative materials	--	--	--
TEM5	Teacher having discussion, using reading kit	--	--	--
TEM6	Teacher having discussion, using audiovisual equipment, learning machine	--	--	--
TEM7	Teacher having discussion, using chalkboard	.16	1.03	0.00-- 6.76
TEM8	Teacher having discussion, using noncurricular leisure reading	--	--	--
TEM9	Teacher having discussion, using no material	1.39	4.77	0.00--27.59
TFM1	Teacher drilling with textbook	--	--	--
TFM2	Teacher drilling with workbook, worksheet, paper	2.69	10.69	0.00--53.77
TFM3	Teacher drilling with test	--	--	--
TFM4	Teacher drilling with game/manipulative materials	.86	3.56	0.00--20.27
TFM5	Teacher drilling with reading kit	.07	.45	0.00-- 2.96
TFM7	Teacher drilling with chalkboard	.48	2.41	0.00-- 14.74
TFM9	Teacher drilling with no material	.15	.96	0.00-- 6.32
TGM1	Teacher giving written assignments with textbook	.31	1.47	0.00-- 8.33
TGM2	Teacher giving written assignments with workbook, worksheet, paper	3.65	5.55	0.00--20.96
TGM3	Teacher giving written assignments with test	--	--	--

CLASSROOM SNAPSHOT VARIABLES (continued)

Var. No.	Variable Name	Mean	S.D.	Range
TGM5	Teacher giving written assignment with reading kit	1.19	3.60	0.00--16.04
THM1	Teacher giving evaluation, feedback, with textbook	.10	.64	0.00-- 4.18
THM2	Teacher giving evaluation, feedback, with workbook, worksheet, paper	1.80	4.83	0.00--22.46
THM3	Teacher giving evaluation, feedback, with test	.58	2.93	0.00--18.14
THM4	Teacher giving evaluation, feedback, with game/ manipulative materials	.12	.81	0.00-- 5.33
THM5	Teacher giving evaluation, feedback, with reading kit	.10	.44	0.00-- 2.67
THM7	Teacher giving evaluation, feedback, with chalkboard	.17	1.14	0.00-- 7.47
TIM2	Teacher giving test, quiz, with workbook, worksheet, paper	.83	2.33	0.00-- 8.37
TIM3	Teacher giving test, quiz, with test	1.94	6.93	0.00--37.31
TIM5	Teacher giving test, quiz, with reading kit	.01	.08	0.00-- .55
TJM4	Teacher in nonreading learning with game/ manipulative materials	.07	.45	0.00-- 2.92
TJM6	Teacher in nonreading learning with audiovisual equipment, learning machine	.30	1.96	0.00--12.88
TJM9	Teacher in nonreading learning with no material	.63	3.29	0.00--20.76
TKM9	Teacher in social interaction with no material	.51	1.69	0.00-- 7.69
TLM1	Teacher managing classroom with textbook	.39	1.58	0.00-- 8.46
TLM2	Teacher managing classroom with workbook, worksheet, paper	.65	2.00	0.00-- 9.40
TLM3	Teacher managing classroom with test	.16	1.07	0.00-- 7.02
TLM4	Teacher managing classroom with game/manipulative materials	.29	1.26	0.00-- 6.43
TLM5	Teacher managing classroom with reading kit	.35	2.20	0.00--14.44
TLM7	Teacher managing classroom with chalkboard	.15	.99	0.00-- 6.51
TLM8	Teacher managing classroom with noncurricular leisure reading	.04	.24	0.00-- 1.55
TLM9	Teacher managing classroom with no material	3.19	4.93	0.00--20.12
TMM2	Teacher in transition with workbook, worksheet, paper	.63	2.00	0.00-- 7.46
TMM3	Teacher in transition with test	.25	1.18	0.00-- 6.62
TMM6	Teacher in transition with audiovisual equipment, learning machine	.15	.98	0.00-- 6.44
TMM9	Teacher in transition with no material	.95	2.40	0.00-- 8.37

CLASSROOM SNAPSHOT VARIABLES (continued)

Var. No.	Variable Name	Mean	S.D.	Range
TNM2	Teacher waiting with workbook, worksheet, paper	.08	.49	0.00-- 3.21
TNM9	Teacher waiting with no material	1.57	3.60	
TOM9	Teacher with uninvolved student with no material	.01	.08	0.00-- .49
TPM2	Teacher disciplining with workbook, worksheet, paper	.01	.06	0.00-- .36
TPM3	Teacher disciplining with test	.18	1.15	0.00-- 7.55
TPM9	Teacher disciplining with no material	.30	1.55	0.00-- 9.89
ABM1	Aide reading aloud with textbook	.88	3.76	0.00--20.60
ABM2	Aide reading aloud with workbook, worksheet, paper	.36	1.99	0.00--12.85
ACM1	Aide making assignments with textbook	.12	.79	0.00-- 5.15
ACM2	Aide making assignments with workbook, worksheet, paper	.18	1.16	0.00-- 7.63
ADM2	Aide instructing with workbook, worksheet, paper	.21	1.01	0.00-- 6.59
AFM1	Aide drilling with textbook	.29	1.91	0.00--12.54
AFM2	Aide drilling with workbook, worksheet, paper	.10	.64	0.00-- 4.18
AFM4	Aide drilling with game/manipulative materials	.14	.95	0.00-- 6.20
AGM2	Aide giving written assignments with workbook, worksheet, paper	.51	1.52	0.00-- 7.31
AHM2	Aide giving evaluation, feedback, with workbook, worksheet, paper	.06	.30	0.00-- 1.88
AIM3	Aide giving test, quiz, with test	.39	2.01	0.00--12.54
AKM9	Aide in social interaction with no material	.04	.20	0.00-- 1.15
ALM2	Aide managing classroom with workbook, worksheet, paper	.14	.60	0.00-- 3.64
ALM3	Aide managing classroom with test	.01	.09	0.00-- .58
ALM9	Aide managing classroom with no material	.81	5.12	0.00--33.59
ANM9	Aide in transition with no material	.15	.97	0.00-- 6.36
ANM9	Aide waiting with no material	.16	1.01	0.00-- 6.64
IAM1	Student reading silently with textbook	.24	.98	0.00-- 5.09
IAM2	Student reading silently with workbook, worksheet paper	3.44	9.99	0.00--56.35

CLASSROOM SNAPSHOT VARIABLES (continued)

Var. No.	Variable Name	Mean	S.D.	Range
IAM5	Student reading silently with reading kit	2.09	5.41	0.00--22.46
IAM8	Student reading silently with noncurricular leisure reading	4.89	11.27	0.00--45.76
IBM2	Student reading aloud with workbook, worksheet, paper	.28	1.25	0.00-- 6.43
IBM5	Student reading aloud with reading kit	.08	.49	0.00-- 3.21
ICM2	Student receiving assignments with workbook, worksheet, paper	2.63	9.80	0.00--47.29
ICM5	Student receiving assignments with reading kit	.16	1.07	0.00-- 6.99
IDM1	Student receiving instruction with textbook	.31	1.41	0.00-- 6.67
IDM2	Student receiving instruction with workbook, worksheet, paper	.45	1.77	0.00-- 8.65
IDM5	Student receiving instruction with reading kit	.16	1.03	0.00-- 6.76
IDM6	Student receiving instruction with audiovisual equip- ment, learning machine	.12	.81	0.00-- 5.32
IDM9	Student receiving instruction with no material	.29	1.36	0.00-- 7.53
IEM2	Student having discussion, with workbook, worksheet, paper	.12	.77	0.00-- 5.02
IFM2	Student drilling with workbook, worksheet, paper	.98	3.57	0.00--16.74
IFM4	Student drilling with game/manipulative materials	.07	.47	0.00-- 3.10
IFM5	Student drilling with reading kit	.08	.53	0.00-- 3.50
IGM1	Student doing written assignment with textbook	1.19	5.09	0.00--30.45
IGM2	Student doing written assignment with workbook, worksheet, paper	11.09	13.63	0.00--48.96
IGM5	Student doing written assignment with reading kit	3.57	8.21	0.00--34.00
IJM4	Student in nonreading learning with game/manipu- lative materials	.77	3.66	0.00--22.33
IJM9	Student in nonreading learning with no material	.15	.98	0.00-- 6.42
IKM1	Student in social interaction with textbook	.02	.11	0.00-- .72
IKM2	Student in social interaction with workbook, work- sheet, paper	.19	.59	0.00-- 3.10
IKM3	Student in social interaction with test	.03	.18	0.00-- 1.15
IKM4	Student in social interaction with game/ manipulative materials	--	--	--
IKM5	Student in social interaction with reading kit	.12	.81	0.00-- 5.33
IKM8	Student in social interaction with noncurricular leisure reading	.07	.47	0.00-- 3.10
IKM9	Student in social interaction with no material	.87	3.03	0.00--18.61

CLASSROOM SNAPSHOT VARIABLES (continued)

Var. No.	Variable Name	Mean	S.D.	Range
IMM5	Student in transition with reading kit	.32	1.56	0.00 -- 9.33
IMM8	Student in transition with noncurricular leisure reading	.04	.16	0.00 -- .75
IMM9	Student in transition with no material	.41	1.40	0.00 -- 8.18
INM1	Student waiting with textbook	.28	1.81	0.00 -- 11.87
INM2	Student waiting with workbook, worksheet, paper	.30	1.14	0.00 -- 6.08
INM3	Student waiting with test	--	--	--
INM5	Student waiting with reading kit	.09	.37	0.00 -- 2.19
INM8	Student waiting with noncurricular leisure reading	.14	.90	0.00 -- 5.91
INM9	Student waiting with no material	1.16	2.35	0.00 -- 7.47
IOM2	Student uninvolved with workbook, worksheet, paper	.09	.31	0.00 -- 1.49
IOM5	Student uninvolved with reading kit	.03	.13	0.00 -- .67
IOM7	Student uninvolved with chalkboard	.01	.06	0.00 -- .39
IOM8	Student uninvolved with noncurricular leisure reading	.03	.13	0.00 -- .78
IOM9	Student uninvolved with no material	.65	1.94	0.00 -- 9.30

PMI VARIABLES

Who	To Whom	What
T = Teacher	T = Teacher	1 = Command request
A = Other adult	A = Other adult	1Q = Direct question
O = Outside intruder	O = Outside intruder	2 = Open-ended request
P = Primary student	P = Primary student	2Q = Open-ended question
D = Different student	D = Different student	3 = Response
V = Volunteer student	V = Volunteer student	4 = Instruction, explanation
S = Small group	S = Small group	5 = General comments, general action
M = Medium group	M = Medium group	6 = Task related comments
L = Large group	L = Large group	7 = Acknowledge
E = Everyone	E = Everyone	8 = Praise
I = Inanimate object, machine		9 = Correction
		10 = No response
		11 = Refusal
		12 = Observing, listening

N, X, T, C

N = Nonverbal
X = Movement
T = Touch
C = Corrective feedback

How

T = Task
R = Reading
B = Behavior
L = Laughter
N = Negative
W = Warmth
D = Disciplinary
G = Guide
I = Idea, opinion
O = Organizing
U = Utilitarian
F = Foul language
P = Punish
S = Sad
H = Humor

Variable Description

Variable No.	Who	To Whom	What	N, X, T, C	How
Student to adult, all verbal, task or reading					
1	P, D, V, S, M, L, E	T, A	not 12	not N	T* or R* not B
Adult to student, all verbal, task or reading					
2	T, A	P, D, V, S, M, L, E	not 12	not N	T* or R* not B
Student to adult, all verbal except response (initiated)					
3	P, D, V, S, M, L, E	T, A	not 3 nor 12	not N	

*Code is necessary for the frame to be acceptable

Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Individual student verbal with adult					
4	P, D, V	T, A	not 12	not N	
All adult to individual students, verbal					
5	T, A	P, D	not 12	not N	
All adult to groups of students, verbal					
6	T, A	S, M, L	not 12	not N	
All adult to entire class, verbal					
7	T, A	E	not 12	not N	
Student commands, requests, and direct questions, task or reading					
8	P, D, V, S, M, L, E	T, A, P, D, V S, M, L, E	1 1Q	—	T* or R* not B, G nor P
Student commands, requests, and direct questions, reading only					
9	P, D, V, S, M, L, E	T, A, P, D, V S, M, L, E	1 1Q	—	R* not T, B, G nor P
Student commands, requests, and direct questions, task only					
10	P, D, V, S, M, L, E	T, A, P, D, V S, M, L, E	1 1Q	—	T* not R, B, G nor P
All students commands, requests, and direct questions					
11	P, D, V, S, M, L, E	T, A, P, D, V S, M, L, E	1 1Q	—	not G nor P
All student open-ended questions or request, task or reading					
12	P, D, V, S, M, L, E	T, A, P, D, V S, M, L, E	2 2Q	not N	T* or R* not B, G nor P
All student open-ended questions or requests, reading					
13	P, B, V, S, M, L, E	T, A, P, D, V S, M, L, E	2 2Q	—	R* not T, B, G nor P

*Code is necessary for the frame to be acceptable

Variable Description						
Variable No.	Who	To Whom	What	N, X, T, C	How	
All student open-ended questions or request, task						
14	P, D, V, S, M, L, E	T, A, P, D, V S, M, L, E	2 2Q	—	T* not R, B, G nor P	
All student open-ended questions or request						
15	P, D, V, S, M, L, E	T, A, P, D, V S, M, L, E	2 2Q	—	not G nor P	
All student questions or requests to adult						
16	P, D, V, S, M, L, E	T, A	1, 1Q 2, 2Q	—	not B, G nor P	
Adult commands, requests, and direct questions to students, non-task						
17	T, A	P, D, V, S, M, L, E	1 1Q	—	not T, R, B, W, G nor P	
Adults commands, requests, and direct questions to students, task or reading						
18	T, A	P, D, V, S, M, L, E	1 1Q	—	T* or R* not B, G nor P	
Adults commands, requests, and direct questions to students, reading						
19	T, A	P, D, V, S, M, L, E	1 1Q	—	R* not T, B, G nor P	
Adult commands, requests, and direct questions to students, task						
20	T, A	P, D, V, S, M, L, E	1 1Q	—	T* not R, B, G nor P	
All Adult commands, requests, and direct questions to students						
21	T, A	P, D, V, S, M, L, E	1 1Q	—	not G nor P	
Adult open-ended questions or requests to students, task or reading						
22	T, A	P, D, V, S, M, L, E	2 2Q	—	T* or R* not B, G nor P	
Adult open-ended questions or requests to students, reading						
23	T, A	P, D, V, S, M, L, E	2 2Q	—	R* not T, B, G nor P	

*Code is necessary for the frame to be acceptable

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Adult open-ended questions or requests to students, task					
24	T, A	P, D, V, S M, L, E	2 2Q	_____	T* not R, B G nor P
All adult open-ended questions or requests to students					
25	T, A	P, D, V, S M, L, E	2 2Q	_____	not G nor P
All adult questions to students					
26	T, A	P, D, V, S M, L, E	1, 1Q 2, 2Q	_____	not B, G nor P
Student responses to an adult, non-task					
27	P, D, V, S M, L, E	T, A	3	_____	not T, R, B, G nor P
Student responses to an adult, task or reading					
28	P, D, V, S M, L, E	T, A	3	_____	T* or R* not B, G nor P
Student responses to an adult, reading					
29	P, D, V, S M, L, E	T, A	3	_____	R* not T, B, G nor P
Student responses to an adult, task					
30	P, D, V, S M, L, E	T, A	3	_____	T* not R, B, G nor P
All student responses to an adult					
31	P, D, V, S M, L, E	T, A	3	_____	not G nor P
Student complying responses to behavioral correction or reinforcement					
32	P, D, V, S M, L, E	T, A	3	_____	B* not T, R nor G

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
All student responses to adult command, request, or direct question, non-task					
33	T, A	P, D, V, S, M, L, E	1 1Q	—	not T, R, B, G nor P
		followed by:			
	P, D, V, S, M, L, E	T, A	3	—	not T, R, B G nor P
All student responses to adult command, request, or direct question, task or reading					
34	T, A	P, D, V, S, M, L, E	1	—	T* or R* not B, G nor P
		followed by:			
	P, D, V, S, M, L, E	T, A	3	—	T* or R* not B, G nor P
All student responses to adult command, request, or direct question, reading					
35	T, A	P, D, V, S, M, L, E	1 1Q	—	R* not T, B, G nor P
		followed by:			
	P, D, V, S, M, L, E	T, A	3	—	R* not T, B, G nor P
All student responses to adult command, request, or direct question, task					
36	T, A	P, D, V, S, M, L, E	1 1Q	—	T* not R, B, G nor P
		followed by:			
	P, D, V, S, M, L, E	T, A	3	—	T* not R, B, G nor P

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
All student responses to adult command, request, or direct question					
37	T, A	P, D, V, S, M, L, E	1 1Q	_____	not B, G nor P
		followed by:			
	P, D, V, S, M, L, E	T, A	3	_____	not B, G nor P
Student voluntary responses to all adult questions, non-task					
38	V*	T, A	3	_____	not T, R, B, G nor P
Student voluntary responses to all adult questions, task or reading					
39	V*	T, A	3	_____	T* or R* not B, G nor P
Adult response to students request or questions, non-task					
40	T, A	P, D, V, S, M, L, E	3	_____	not T, R, B, G nor P
Adult response to students requests or questions, task or reading					
41	T, A	P, D, V, S, M, L, E	3	_____	T* or R* not B, G nor P
Adult responses to student requests or questions, reading					
42	T, A	P, D, V, S, M, L, E	3	_____	R* not T, B G nor P

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Adult responses to student requests or questions, task					
43	T, A	P, D, V, S, M, L, E	3	_____	T* not R, B, G nor P
All adult responses to student requests or questions					
44	T, A	P, D, V, S, M, L, E	3	_____	not B, G nor P
Adult responses to student questions or requests with open-ended questions or requests, task or reading					
45	P, D, V, S, M, L, E	T, A	1, 1Q 2, 2Q	_____	T* or R* not B, G nor P
	followed by:				
	T, A	P, D, V, S, M, L, E	2 2Q	not N	T* or R* not B, G nor P
Adult responses to student questions or requests with open-ended questions or request					
46	P, D, V, S, M, L, E	T, A	1, 1Q 2, 2Q	_____	not B, G nor P
	followed by:				
	T, A	P, D, V, S, M, L, E	2 2Q	not N	not B, G nor P
Adult responses to student questions or requests with a direct question or request, task or reading					
47	P, D, V, S, M, L, E	T, A	1, 1Q 2, 2Q	_____	T* or R* not B, G nor P
	followed by:				
	T, A	P, D, V, S, M, L, E	1 1Q	_____	T* or R* not B, G nor P

*Code is necessary for the frame to be acceptable

Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Students extended responses, reading					
48	P, D, V, S, M, L, E	T, A, P, D, S, M, L, E (not V)	3	not N	R* not T, B, G nor P
	followed by:				
	P, S, M, L, E (not D nor V)	T, A, P, D, S, M, L, E (not V)	6	not N	R* not T, B, G nor P
Student extended responses, task					
49	P, D, V, S, M, L, E	T, A, P, D, S, M, L, E (not V)	3	not N	T* not R, B, G nor P
	followed by:				
	P, S, M, L, E (not D nor V)	T, A, P, D, S, M, L, E (not V)	6	not N	T* not R, B, G nor P
Students extended responses, task or reading					
50	P, D, V, S, M, L, E	T, A, P, D, S, M, L, E (not V)	3	not N	T* or R* not B, G nor P
	followed by:				
	P, S, M, L, E (not D nor V)	T, A, P, D, S, M, L, E (not V)	6	not N	T* or R* not B, G nor P
All student extended responses					
51	P, D, V, S, M, L, E	T, A, P, D, S, M, L, E (not V)	3	not N	not B, G nor P
	followed by:				
	P, S, M, L, E (not D nor V)	T, A, P, D, S, M, L, E (not V)	6	not N	not B, G nor P
All adult responses to student questions or request with a direct question or request					
52	P, D, V, S, M, L, E	T, A	1, 1Q 2, 2Q	—	not B, G nor P
	followed by:				
	T, A	P, D, V, S, M, L, E	1 1Q	—	not B, G nor P

*Code is necessary for the frame to be acceptable

Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, V, T, C</u>	<u>How</u>
All adult responses to students questions or requests with a question or request					
53	P, D, V, S, M, L, E	T, A	1, 1Q 2, 2Q	—	not B, G nor P
	followed by:				
	T, A	P, D, V, S, M, L, E	1, 1Q 2, 2Q	—	not B, G nor P
Student reading aloud					
54	P, D, V, S, M, L, E	T, A	4	not N	R* not T, B, G nor P
All student responses to adult open-ended questions or requests					
55	T, A	P, D, V, S, M, L, E	2 2Q	—	not B, G nor P
	followed by:				
	P, D, V, S, M, L, E	T, A	3	—	not B, G nor P
All adult instruction, non-task					
56	T, A	P, D, V, S, M, L, E	4	—	not T, R, B nor P
All adult instruction, reading					
57	T, A	P, D, V, S, M, L, E	4	—	R* not T, B nor P
All adult instruction, task					
58	T, A	P, D, V, S, M, L, E	4	—	R* not R, B nor P
All adult instruction, task or reading					
59	T, A	P, D, V, S, M, L, E	4	—	T* or R* not B nor P
All adult instruction					
60	T, A	P, D, V, S, M, L, E	4	—	not B nor P

*Code is necessary for the frame to be acceptable

Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Adult instructs small group, task or reading					
61	T, A	S, H, L	4	_____	T* or R* not B, G nor P
Adult instructs entire class, task or reading					
62	T, A	E	4	_____	T* or R* not B, G nor P
Students receiving instruction from a machine					
63	I	P, D, V, S, M, L, E	4	_____	not B, G nor P
Student presenting information to a group, reading					
64	P	D, S, V, M, L, E (not P)	4	_____	R* not T, B, G nor P
Student presenting information to a group, task					
65	P	D, S, V, M, L, E (not P)	4	_____	T* not R, B, G nor P
All student presenting information to a group					
66	P	D, S, V, M, L, E (not P)	4	_____	not B, G nor P
Adult social comments to students					
67	T, A	P, D, V, S, M, L, E	5	_____	not T, R, B, G nor P
Student social comment to adult					
68	P, D, V, S, M, L, E	T, A	5	_____	not T, R, B, G nor P

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
All social comments					
69	T, A, P, D, V S, M, L, E	T, A, P, D, V S, M, L, E	5	—	not T, R, B, G nor P
Adult task related comments to students					
70	T, A	P, D, V, S, M, L, E	6	—	not B, G nor P
Student task related comments to adult					
71	P, D, V, S, M, L, E	T, A	6	—	not B, G nor P
Adult acknowledgement to students, non-task					
72	T, A	P, D, V, S, M, L, E	7	—	not T, R, B, N, W, G nor P
Adult acknowledgement to students, task or reading					
73	T, A	P, D, V, S, M, L, E	7	—	T* or R* not B, N, W, G nor P
Adult acknowledgement to students, reading					
74	T, A	P, D, V, S, M, L, E	7	—	R* not T, B, N, W, G nor P
Adult acknowledgement to students, task					
75	T, A	P, D, V, S, M, L, E	7	—	T* not R, B, N, W, G nor P
Adult acknowledgement to students, behavior					
76	T, A	P, D, V, S, M, L, E	7	—	B* not N, W, G nor P
All adult acknowledgement to students					
77	T, A	P, D, V, S, M, L, E	7	—	not N, W, G nor P

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
All adult encouraging remarks to students					
78	T, A	P, D, V, S, M, L, E	7	—	W* not N, G nor P
Adult praise to students, non-task					
79	T, A	P, D, V, S, M, L, E	8	—	not T, R, B, N, G nor P
Adult praise to students, task or reading					
80	T, A	P, D, V, S, M, L, E	8	—	T* or R* not B, N, G nor P
Adult praise to students, reading					
81	T, A	P, D, V, S, M, L, E	8	—	R* not T, B, N, G nor P
Adult praise to students, task					
82	T, A	P, D, V, S, M, L, E	8	—	T* not R, B, N, G nor P
Adult praise to students, behavior					
83	T, A	P, D, V, S, M, L, E	8	—	B* not T, R, G nor P
All adult praise to students					
84	T, A	P, D, V, S, M, L, E	8	—	not N nor G
Adult praise and support, reading					
85	T, A		7,8	—	R* not T, B, G, N nor P
Adult praise and support, task or reading					
86	T, A		7,8	—	R* T* not B, G, N nor P

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<u>Variable Description</u>					
<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>Who</u>
All adult praise and support					
87	T, A	_____	7,8	_____	not G, N nor P
Adult gives corrective feedback by probing, task or reading					
88	T, A	P, D, V, S, M, L, E	1 1Q	C*	T* or R* not B, G nor P
Adult gives corrective feedback by giving correct answer, task or reading					
89	T, A	P, D, V, S, M, L, E	4	C*	T* or R* not B, G nor P
Adult gives corrective feedback by guiding student to answer, task or reading					
90	T, A	P, D, V, S, M, L, E	4	C*	T* or R* and G* not B nor P
All adult corrective feedback, task or reading					
91	T, A	P, D, V, S M, L, E	1 1Q 4 9	C*	T* or R* not B nor P
Adult negative corrective feedback, task or reading					
92	T, A	P, D, V, S, M, L, E	9	_____	T* or R* and N* not B, G nor P
Adult corrective feedback, behavior					
93	T, A	P, D, V, S, M, L, E	9	_____	B* not T, nor R
Adult negative corrective feedback, behavior					
94	T, A	P, D, V, S, M, L, E	9	_____	B* and N* not T, R, nor G
All adult negative corrective feedback					
95	T, A	P, D, V, S, M, L, E	9	_____	N* not G

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Student not responding to adult, task or reading					
96	P, D, V, S, M, L, E	T, A	10	N*	T* or R* not B, G nor D
All student not responding to adult					
97	P, D, V, S, M, L, E	T, A	10	N*	not G
All adult not responding to student's question or request					
98	T, A	P, D, V, S, M, L, E	10	N*	not G nor P
Students not knowing answer to adult's question or request, task or reading					
99	P, D, V, S, M, L, E	T, A	10	not N	T* or R* not G nor P
Student refusal to comply with adult, task					
100	P, D, V, S, M, L, E	T, A	11	—	T* not R, B, G nor P
Student refusal to comply with adult, reading					
101	P, D, V, S, M, L, E	T, A	11	—	R* not T, B, G nor P
Student refusal to comply with adult, behavior					
102	P, D, V, S, M, L, E	T, A	11	—	B* not T, R nor G
All student refusal to comply with adult request					
103	P, D, V, S, M, L, E	T, A	11	—	not G
All adult refusal to comply with student request					
104	T, A	P, D, V, S, M, L, E	11	—	not G

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<u>Variable Description</u>					
<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
All adult non-interacting with students, non-verbal					
105	T	T	6	NV*	_____
Adult movement while interacting with students					
106	T, A	P, D, V, S, M, L, E	_____	X*	_____
All adult touching of students, positive					
107	T, A	P, D, V, S, M, L, E	_____	T*	not N
All adult touching of students, negative					
108	T, A	P, D, V, S, M, L, E	_____	T*	N*
All adult listening to student					
109	T, A	P, D, V, S, M, L, E	12	not NV	not B, G, nor P
All adult observing student					
110	T, A	P, D, V, S, M, L, E	12	NV*	not B, G nor P
All classroom interactions, reading					
111	T, A	P, D, V, S, M, L, E	_____	_____	R* not T, B, nor P
		<u>AND</u>			
	P, D, V, S, M, L, E	T, A, P, D, V S, M, L, E	_____	_____	R* not T, B nor P

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
All classroom interactions, task					
112	T, A	P, D, V, S, M, L, E	_____	_____	T* not R, B nor P
		AND			
	P, D, V, S, M, L, E	T, A, P, D, V, S, M, L, E	_____	_____	T* not R, B nor P
All classroom interactions, behavior					
113	_____	_____	_____	_____	B* not R nor T
All adult positive behavior					
114	T, A	_____	_____	_____	W* or L* not N, F, P nor S
All student positive behavior					
115	P, D, V, S, M, L, E	_____	_____	_____	W* or L* not N, F, P nor S
All positive behavior					
116	_____	_____	_____	_____	W* L* not N, F, P nor S
All adult negative behavior					
117	T, A	_____	_____	_____	N*, or F*, or P*, or D* or S* not L nor W
All student negative behavior					
118	P, D, V, S, M, L, E	_____	_____	_____	N*, or F*, or P*, or D* or S* not L nor W
All negative behavior					
119	_____	_____	_____	_____	N*, or F*, or P*, or D* or S* not L nor W

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<u>Variable Description</u>					
<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
All adult warm supportive interactions with students					
120	T, A	P, D, V, S, M, L, E	_____	_____	W* not N, F, P, D nor S
Student being sent from classroom for disciplinary reason					
121	_____	_____	_____	_____	D*
All adult humorous interactions					
122	T, A	_____	_____	_____	H*
All student humorous interactions					
123	P, D, V, S, M, L, E	_____	_____	_____	H*
All humorous interactions					
124	_____	_____	_____	_____	H*
All positive or humorous interaction					
125	_____	_____	_____	_____	L*, W* or H*
Adult offering students a choice of materials or activities					
126	T, A	P, D, V, S, M, L, E	_____	_____	I* and O* not B, G nor P
Students statements which demonstrate ability to synthesis					
127	P, D, V, S, M, L, E	_____	_____	_____	I* not B, G nor P
Adult comments to students regarding classroom assignment					
128	T, A	P, D, V, S, M, L, E	_____	not N	O*
Students comments to adult regarding classroom assignment					
129	P, D, V, S, M, L, E	T, A	_____	_____	O*

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
All classroom punitive behavior					
130	T, A, P, D, V, S, M, L, E	T, A, P, D, V, S, M, L, E	_____	_____	P*
Student does not know answer; adult gives student correct feedback by probing					
131	P	T, A	10	_____	not G nor P
		followed by:			
	T, A	P*	1, 1Q 2, 2Q	C*	not G nor P
Student does not know answer; adult tells student answer					
132	P, D	T, A	10	_____	not G nor P
		followed by:			
	T, A	P*	4	C*	not G nor P
Student does not know answer; adult guides student					
133	P, D	T, A	10	_____	not G nor P
		followed by:			
	T, A	P*	4	C*	G*. not P

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Student does not know answer to adults question; adult asks another student					
134	P	T, A	10	not N	not G nor P
		followed by:		C*	
	T, A	D, S, M, L,	1, 1Q	not N	not G nor P
		E	2, 2Q		
		(not P nor V)			
Student does not know answer to adults question; adult encourages student					
135	P	T, A	10	not N	not G nor P
		followed by:			
	T, A	P	7		W*
					not N, G nor P
Students response unacceptable; adult asks another student					
136	P	T, A	3		not G nor P
		followed by:			
	T, A	D, S, M, L,	1, 1Q	C*	not G nor P
		E	2, 2Q		
		(not P nor V)			
Students response unacceptable, adult encourages student					
137	P	T, A	3		not G nor P
		followed by:			
	T, A	P	7		W*
					not N, G nor P
Student response unacceptable, adult rephrases question					
138	P	T, A	3		not G nor P
		followed by:			
	T, A	P	1, 1Q	C*	not N, G nor P
			2, 2Q		
Student response unacceptable, adult tells student answer					
139	P	T, A	3		not G nor P
		followed by:			
	T, A	P	4	C*	not N, G nor P

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Variable Description

Variable No.	Who	To Whom	What	N, X, T, C	How
Student expressing dislike for classroom assignments					
140	P, D, V, S, M, L, E	T, A	6	_____	O* and N*
All interactions regarding classroom assignments					
141	T, A, P, D, V S, M, L, E	T, A, P, D, V S, M, L, E	_____	_____	O*
Adult comments to students regarding organization of classroom					
142	T, A	P, D, V, S, M, L, E	_____	_____	U*
Adult without students involved in organizing classroom					
143	T, A	T, A	_____	_____	U* not B, W, D, H, G, I, O, F nor P
All interaction involved with organization or assignments					
144	_____	_____	_____	_____	O* or U* not B nor P
Adult comments to students using foul language					
145	T, A	P, D, V, S, M, L, E	_____	not N	F*
Student comments to adults using foul language					
146	P, D, V, S, M, L, E	T, A	_____	not N	F*
All foul language					
147	_____	_____	_____	not N	F*
Student display of sadness					
148	P, D, V, S, M, L, E	_____	_____	not N	S*

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Students response unacceptable, adult guides student					
149	P	T, A	3	_____	not G nor P
	followed by:				
	T, A	P	4	C*	G* not P
Adult acknowledgement of students extended response					
150	P, D, V, S, M, L, E	T, A	3	not N	not G nor P
	followed by:				
	P, S, M, L, E	T, A	6	not N	not G nor P
	(not D nor V) followed by:				
	T, A	P, S, M, L, E	7	not N	not G nor P
	(not D nor V)				
Adult praise of students extended response					
151	P, D, V, S, M, L, E	T, A	3	not N	not G nor P
	followed by:				
	P, S, M, L, E	T, A	6	not N	not G nor P
	(not D nor V) followed by:				
	T, A	P, S, M, L, E	8	not N	not G nor P
	(not D nor V)				
Adult corrective feedback of students extended response					
152	P, D, V, S, M, L, E	T, A	3	not N	not G nor P
	followed by:				
	P, S, M, L, E	T, A	6	not N	not G nor P
	(not D nor V) followed by:				
	T, A	P, S, M, L, E	_____	C*	not P
	(not D nor V)				

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Students refusal to respond, adult encourages student					
153	P	T, A	11	_____	not G nor P
		followed by:			
	T, A	P, D	7	_____	W* not G nor P
Students refusal to respond, adult asks another student					
154	P	T, A	11	_____	_____
		followed by:			
	T, A	D*	1, 1Q 2, 2Q	_____	not G nor P
Student uses foul language, adult corrects students behavior					
155	P, D, V, S M, L, E	T, A	_____	_____	F*
		followed by:			
	T, A	P, S, M, L, E (not D nor V)	9	_____	D* not T, R, nor G
Adult acknowledgement of students response to a direct question or request					
156	T, A	P, D, S, M, L, E	1 1Q	_____	not G nor P
		followed by:			
	P, V, S, L, E (not D)	T, A	3	_____	not G nor P
		followed by:			
	T, A	P, S, M, L, E (not D nor V)	7	_____	not G nor P
Adult praise to students response to an open-ended question or request					
157	T, A	P, D, S, M, L, E	2 2Q	_____	not G nor P
		followed by:			
	P, V, S, M, L, E (not D)	T, A	3	_____	not G nor P
		followed by:			
	T, A	P, S, M, L, E (not D nor)	8	_____	not G nor P

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Variable Description

<u>Variable No.</u>	<u>Who</u>	<u>To Whom</u>	<u>What</u>	<u>N, X, T, C</u>	<u>How</u>
Student extended responses to adult open-ended question or request, task or reading					
158	T, A	P, D, S, M, L, E	2 2Q	not N	T* or R* not B, G nor P
	followed by:				
	P, V, S, M, L, E (not D)	T, A	3	not N	T* or R* not B, G nor P
	followed by:				
	P, S, M, L, E (not D nor V)	T, A	6	not N	T* or R* not B, G nor P
All student extended responses to adult open-ended question or request					
159	T, A	P, D, S, M, L, E	2 2Q	not N	
	followed by:				
	P, V, S, M, L, E (not D)	T, A	3	not N	
	followed by:				
	P, S, M, L, E (not D nor V)	T, A	6	not N	
All adult interaction with outside intruder					
160	T, A	O	_____	_____	
	<u>AND</u>				
	O	T, A	_____	_____	
Adult begins interaction with a different student					
161	T, A	D	_____	_____	
Different student begins interaction with adult					
162	D	T, A	_____	_____	

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